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CRITERIA FOR THE DIAGNOSIS OF CERTAIN TUBERCULODERMS

Chairman's Address

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All dermatologists are aware of the great progress that has been made in recent years in our knowledge of cutaneous tuberculosis. We have kept abreast of the advances with the knowledge of tuberculosis elsewhere and have followed the research in related fields. We have attempted to apply the new facts as each was established to what was known about cutaneous tuberculosis, but despite our considerable present knowledge, despite all the advances in the fields of allergy and immunology, we have been unable to find an explanation for the great variance in the morphologic aspects of the various tuberculoderms as we know them today.

The finding of the tubercle bacillus in lupus vulgaris lesions, both by culture and inoculation, disclosed that this cutaneous disease is in general tuberculous. This was a great advance, but it did not explain why in certain tuberculous patients there should develop such a slow, almost benign, form of cutaneous tuberculosis, even though its manifestation in the skin was a destructive and serious malady in itself. Other cutaneous diseases less destructive than lupus vulgaris had been suspected of being closely related to lupus, but proof of their tuberculous causation was slow in coming. Gradually evidence was accumulated that some of these, for example acnitis, were also caused by the tubercle bacillus, and one by one a number of diverse cutaneous conditions were proved to be of tuberculous causation or, because of certain constant observations, were strongly suspected of being tuberculous. When this relationship, real or suspected, of tuberculosis was applied to a large series of poorly described cutaneous lesions, a nosologic terminology evolved which to this day makes the subject incredibly involved and complex.

In 1896 Darier propounded his theory of the tuberculids, and a new nomenclature was evolved. Lesions which were suspected of being tuberculous, but in which the tubercle bacillus could rarely if ever be found, were called "tuberculids," and the enthusiasm of some allowed a large number of cutaneous conditions to be included in this ill defined nosologic group.

As certain cutaneous lesions which either had been proved to be tuberculous or were still strongly suspected of being so became better known and were reported with greater regularity, an effort was made to classify them. Some students of the subject decided that certain types arose from inoculation in virgin soil, and they classified these types as external cutaneous tuberculosis, while other forms developed from endogenous infections and these they called internal types. Other classifications were based on the mode of spread and on the suspected manner of sowing of the bacilli in the skin. The way the patient who harbored various tuberculous lesions reacted to tuberculin provided explanation for the pathogenesis of certain types and hence another means of classification. The course and prognosis of the disease revealed the close relationship of some of these diverse conditions.

Regardless of which classification one accepts, it must be admitted that the behavior, the morphologic and histologic aspects and the prognosis of each well established form of cutaneous tuberculosis is peculiar to that form and that we must have as thorough an understanding of each particular form as present knowledge allows. Why do these various forms exist? To account for such dissimilarities it is necessary to presuppose different types of reaction between the bacilli and the tissues and to accept as an explanation the theory that there are individual peculiarities of the tissue in different persons.

A given pathogenic organism provokes, in the main, a fairly constant reaction in the tissues, as is so well demonstrated in histologic study of the reactions provoked by the Treponema pallidum. The tubercle bacillus also brings about a tissue response which is often easily recognizable. However, histologic analysis of a tuberculoderm, taking into consideration the epidermis, connective tissue, lymph vessels, blood vessels, glands and other parts, demonstrates that there is a certain uniformity in the individual tissue alternates throughout most of these lesions and that the pathologic changes do not account for the structure to any great extent. The quantitative value of the reaction seems more important than the qualitative, so that, by and large, the histologic observations of tuberculoderms do not explain either their presence or their form. The great morphologic variation must admit different types or degrees of reaction, but minute analysis invariably reveals the stamp of tuberculosis. The differences must rest, therefore, with the peculiarities of the tissues and all of the forces of tissue resistance, organism virulence, anatomic location and, of course, many unexplained phenomena.

To be able to diagnose, understand and treat the various forms of cutaneous tuberculosis as we know them today demands exhaustive study of the known facts about each of these various forms, and even then our knowledge must be somewhat adapted to the case at hand. Isolated well established observations are valuable, even though it is difficult to understand why certain things pertain when a case is viewed as representative of a type in a classification.

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Therefore, I propose to review the established facts about a few of the tuberculoderms with the hope that we may attain a more uniform terminology and understanding when we are discussing these diseases.

LUPUS VULGARIS

Lupus vulgaris is the most important of the tuberculous conditions of the skin. Since it does not occur frequently in America, it is not so well known here as it is in Europe, where it is endemic in certain areas and is of vast social and economic importance. Lupus vulgaris is a term which is applied to a great many *variations of a basic condition*; hence a knowledge of the disease must include an understanding of its inception and an appreciation of its metamorphoses which result in such diverse morphologic forms and, unfortunately, in such an array of names. It must be constantly borne in mind that the different names do not imply a different disease, but merely varieties of one and the same process. *In fact, it would be better if all forms were called lupus vulgaris, with the type which briefly describes the chief variation following in parentheses; for example: lupus vulgaris (tumidus type).*

Lupus vulgaris always begins with the formation of a primary or elementary lesion. When the patient is first seen, the disease may be so altered that the beginning lesion cannot be found or pointed out by the patient; nevertheless there had been a primary lesion. It is called the lupus nodule, which is in reality a histologic designation; clinically it appears as a small group of lupus nodules, comprised microscopically of a primary lupus macule or papule, or even a small node. The primary lesion of lupus vulgaris must not be confused with a microscopic tubercle or with the primary lesion of tuberculosis as seen in the lung. It is merely the initial reaction to the tubercle bacillus in the skin of a person who, for various inexplicable reasons, is a fit subject for this peculiar form of cutaneous tuberculosis known as lupus vulgaris. This individual susceptibility rests on many factors about which we may speculate, but the reason that in a person infected with tubercle bacilli there develops a particular type of cutaneous tuberculosis simply is not known. The general laws that govern the reaction of the human organism to tuberculosis must pertain in cutaneous tuberculosis, but it is more difficult to apply them and to observe the various stages and changes in the integument. The state of allergy and the degree of immunity are closely related to the morphologic manifestations in cutaneous tuberculosis, but the relationship is not so well understood as it is in the lungs. The person in whom lupus vulgaris develops evidently has a high degree of allergy but low immunity and resistance. There is a *decided defense reaction against* invasion of the bacilli, but an inability to overcome the invaders or even to keep the disease from advancing. For this reason, lupus vulgaris is in most instances a chronic slowly progressive [illegible] as a small lupus nodule, growing [illegible]rming an ever enlarging plaque, the character of which changes *when the inflammation brings about noticeable alterations* in the epidermis or cutis. If the epidermis becomes hyperkeratotic, the lesion assumes a verrucous character, or if lymphatic stasis is pronounced in the corium the lesion becomes tumefied, and so on, but the basic process is the same, a tuberculous inflammation beginning and extending in the cutis and having certain characteristics which are unique for lupus vulgaris.

Lupus vulgaris is distinctly a class disease. It is rarely seen in the stratum of society which enjoys ample food, hygienic surroundings and protection from close contact with an infective source, such as neglected and undetected tuberculosis in the milieu of a person. Geographic locations and climates also play an important role. Lupus vulgaris occurs endemically in regions which have a moist cool climate with a relatively small number of hours of sunlight per year. It is an extremely rare disease in the tropics.

Lupus vulgaris frequently begins in childhood, especially in endemic areas, although this is not so often true of the sporadic cases seen in America. This predilection may be due to certain anatomic properties of the skin, mucous membranes and lymphatic apparatus of childhood, and one may readily appreciate the greater opportunity for infection of a child in a household in which there is tuberculosis.

That lupus vulgaris is due to tuberculosis seems to be well established, even though it is difficult to demonstrate the bacillus in lupous tissue. Numerous positive results of animal inoculations, the nature of the pathologic changes within the lesion, the patient's positive reactions to tuberculin and the identification of the organism by many investigators all seem to leave no doubt of the tuberculous nature of this disease.

The disease, as previously stated, begins as a small collection of miliary tuberculous nodules situated in the papillary portion of the cutis, or even deeper. They first appear as a small circumscribed flat red or brown area of infiltrate which cannot be obliterated by glass pressure (diascopy), but later appear paler and often have the apple jelly color which is so traditionally quoted as being characteristic of lupus vulgaris. The gross nodule is soft and easily permits penetration with a pointed probe. Growth is slow but steady, and the small node soon becomes a round or oval area which may be either smooth or covered with a fine scale. The plane or scaly lesion is characteristic for lupus vulgaris in childhood. As growth progresses, the lesions usually become more papular and elevated and the outline changes; in some a disk-like plaque results, and in others the peripheral growth is more rapid and, with some degree of healing in the center of the lesion, becomes annular or serpiginous. If growth is rapid and the process intense, the lesion assumes the appearance of an elevated tumor, sometimes becoming fungoid. If the process involves chiefly the papillary layer and the epidermis is affected, the lesion becomes verrucous or papillomatous, but if the patient is a candidate for severe disease, ulceration with secretion and crust formation quickly ensues. Lupus vulgaris lesions always have sharp boundaries, and the surrounding tissue may appear normal, or a few sentinel lupus nodules may stand out at the periphery in the normal tissue.

The further growth and development of an initial area of lupus vulgaris may proceed in a variety of ways. The plaque may attain a certain size and then remain stationary in size and type. If growth continues, it is very slow, and gradually scar formation takes place, beginning in the center of the plaque but almost never being complete, islands of characteristic lupus tissue being discernible in the scar. Another possibility is the appearance of new plaques in different parts of the body. But the commoner course of events is that the plaque extends in area and changes in character. Long-standing plaques either ulcerate and become crusted or become covered with a thick dry scale. Face lesions are prone to become tumidified because of stasis, while plaques on the body become verrucous. As in every tuberculous process, so also does lupus have the tendency to form fibrous scar. The scar of a plane plaque is often soft and smooth, but the scarring which follows ulcerating and destructive lupus vulgaris lesions may lead to unsightly and handicapping deformity. About the nose, mouth and eyes, and also in the hands, the scars may cause actual loss of function and great disability.

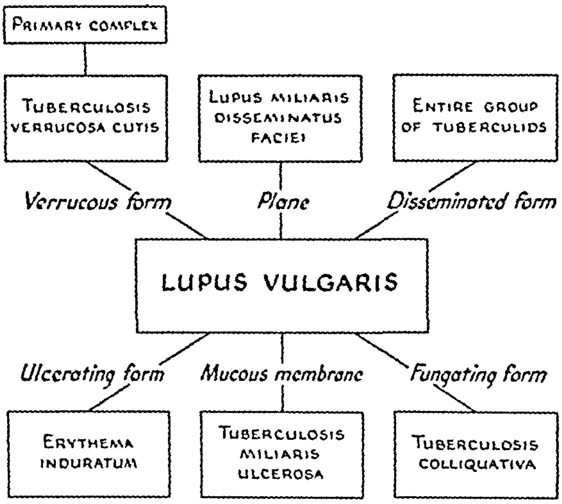
Without further description, it may readily be realized that lupus vulgaris may be a rather benign torpid process, involving only a small area, or it may be very destructive and widely disseminated. It is a disease of great variations and extremes, but one common characteristic for all types is the chronicity. Rate of growth of the lesions may be rather rapid, but usually they take months or even years to spread. There is no way of anticipating what may take place. In some patients the disease may seem to be controlled rather well when suddenly new lesions appear or new areas become involved. There is some seasonal incidence or recrudescence, late winter being the time when this tendency is most often noticed.

Lupus vulgaris may appear on any part of the body, but the face is certainly an area of predilection. Strangely the scalp is rarely involved, and if so only as an extension of facial occurrence. Why the face is more often invaded than any other part of the body is not known, but the frequent localization about the nose has led some to state that such involvement is secondary to a diseased nasal mucous membrane. Often the nasal mucosa, as well as the nasal openings and the structure of the nose, take part in the process, which may go on to destruction of the soft parts, with resulting unsightly deformity. It is the common involvement of the nose and face which makes lupus vulgaris such a hideous and terrifying disease, and ostracizes the patient in his social and economic life.

For each part of the body, lupus has certain more or less characteristic forms, but they are not of diagnostic importance. It must also be mentioned that the disease may occur with a number of disseminated lesions appearing simultaneously. This type is seen in childhood and may follow some acute infection, such as measles or scarlet fever. A variant of this disseminated type is the much more dangerous widely dispersed hemorrhagic postexanthematous eruption, which is more accurately a form of acute miliary tuberculosis than of lupus vulgaris.

The histologic picture of lupus vulgaris is almost as complex as its clinical manifestations. The predominating picture is that of a tuberculous granuloma, but many different combinations of the component parts of such an inflammation may be seen. The presence of groups of epithelioid tubercles, with giant cells set off from each other by lymphocytic infiltrates, is, in brief, what is seen. Caseation as seen in other organs is rare, but certain degrees of necrosis in the center of the tubercle is often noted. The inflammation begins high in the cutis and may spread laterally or even downward, but lupus vulgaris is usually rather superficial. The granuloma has sharp boundaries, appearing at times to have a capsule, but this is not the case. Blood vessels may be found in the granuloma, and remnants of such vessels make one believe that the inflammation followed the blood vessel network. Connective tissues and appendages are destroyed, and the epidermis may undergo a variety of changes, ranging from hypertrophy with acanthosis to complete destruction with ulceration. Remnants of epithelial cells may often be seen in the infiltrate, and this fact has been used as an explanation for the ease with which these cells may take on abnormal growth and cause epitheliomas to develop. The tendency to sclerosis is often developed in lupus tissue; thus an effort at healing is initiated. It must be emphasized that a great many different pictures may be seen microscopically from excised lupous tissue and that there is no pathognomonic observation. Tuberculosis may be observed microscopically in the lesion, but definite microscopic diagnosis of lupus vulgaris is most difficult.

From this brief clinical and histologic description, it may readily be realized that lupus vulgaris is a protean disease, but if one recalls the various forms and transitions this disease may undergo, one may much better understand all forms of cutaneous tuberculosis. In fact, there is hardly a known form of tuberculoderm that has not a prototype in lupus vulgaris. The scheme presented herein illustrates how lupus vulgaris may be taken as the common form to which all types of cutaneous tuberculosis may be compared.


PRIMARY COMPLEX
TUBERCULOSIS VERRUCOSA CUTIS
LUPUS MILIARIS DISSEMINATUS FACIEI
ENTIRE GROUP OF TUBERCULIDS
Verrucous form
Plane
Disseminated form
LUPUS VULGARIS
Ulcerating form
Mucous membrane
Fungating form
ERYTHEMA INDURATUM
TUBERCULOSIS MILIARIS ULCEROSA
TUBERCULOSIS COLLIQUATIVA

Schematic representation of relationship of lupus vulgaris and other types of cutaneous tuberculosis.

The criteria for the diagnosis of lupus vulgaris are:

1. Insidious onset
2. Primary lesion: the lupus nodule
3. Peripheral local extension
4. Gradual metamorphosis, assuming a type
5. Very slow growth
6. Topography—face, commonest location
7. Microscopic analysis: varied but tuberculoid structure present
8. Tuberculin reaction usually positive

One should search for internal tuberculosis especially in the lungs and glands; tubercle bacilli should be searched for by all known methods.

LUPUS MILIARIS DISSEMINATUS

Lupus miliaris disseminatus faciei occupies a unique position among the tuberculoderms. It possesses characteristics of both plane lupus vulgaris and of the facial type of tuberculid which is often called acnitis. It is a relatively rare disease, but, because of its similarity to the now popular rosacea-like tuberculid and to the miliary form of cutaneous sarcoid, it is worthy of considerable attention.

The eruption occurs almost exclusively on the face and even there shows a predilection for the eyelids, the upper lip, the chin and immediately adjacent areas. It rarely involves the forehead, ears or scalp. It has been seen on the neck. The rest of the body, even the elbow region and the fingers or the toes which are often the seat of tuberculids, is entirely free.

Onset is rather sudden but insidious, the lesions appearing painlessly and either individually or many at the same time, their number gradually increasing until the total number that are going to constitute the eruption have made their appearance. This may take up to six weeks. The total having been attained, no new lesions form. The body apparently is able to limit and control the outbreak to a comparatively few lesions; about fifty is the maximum. The individual lesion is small, but there is some variation in size, from that of a grain of wheat to a small pea. They remain discrete and do not coalesce to make a plaque, are symmetric, have the characteristic color of lupus nodules, are soft and are not covered with a crust. Occasionally the center appears to be pustular but on incision does not drain. The border is so sharp that the lesion can be destroyed with a microcautery. The lesions remain in situ for a varying length of time, from three to six months or even longer, and then gradually disappear, often leaving a variola-like scar. I have not seen recurrence in a single patient with lupus miliaris. The tuberculin reaction may or may not be positive. While much importance has been attached to a negative reaction, it has no bearing on the diagnosis.

The observation of a tubercle located just below the epidermis and having central caseous necrosis has been described so often that one expects always to find just that on microscopic examination, but that has not been my experience. I have seen considerable variation, sometimes the picture just described and at other times an epithelioid tubercle or a sharply circumscribed mass of tuberculoid structure with or without necrosis. The location may or may not be perifollicular.

The condition resembles lupus vulgaris because the indivdual lesion resembles a lupus nodule, has the same color and is similar under glass pressure and because of the histologic observations, which show it to be tuberculoid or even entirely like tuberculosis elsewhere in the body. It simulates the tuberculids because of its sudden exanthem-like appearance, its spontaneous disappearance with characteristic scarring and the great difficulty in demonstrating tubercle bacilli.

The criteria for diagnosis are:

1. Sudden appearance
2. Particular areas of the face only involved
3. Discrete lupus nodule-like lesion
4. Microscopic section
5. Indolent course
6. Self limited
7. Tuberculin reaction

Lupus miliaris disseminatus faciei might well be an abortive form of plane lupus vulgaris. The individual lesion cannot be differentiated from a lupus vulgaris nodule. However, the fact that the lesions remain discrete, without forming a plaque, and disappear spontaneously makes the condition different from ordinary lupus vulgaris. Treatment as a rule is not necessary. Vitamin D was administered to 2 patients with the condition without any apparent effect.

TUBERCULOSIS VERRUCOSA CUTIS

This form of cutaneous tuberculosis also is rare, and, although often considered in differential diagnoses, it occurs with such infrequency that its characteristics are not as well known as one would think. Just as I consider lupus miliaris closely related to plane lupus vulgaris, so do I consider tuberculosis verrucosa cutis as a mild benign form of verrucous lupus vulgaris. The condition has been observed often enough in pathologists, veterinarians and butchers to be looked on as an occupational disease and, because the infection is external, as a form of inoculation tuberculosis.

The initial lesion, its evolution and course, the lack of lupus nodules and the location readily differentiate the early process from verrucous lupus vulgaris, while in the well developed large plaque the differences are not so apparent.

The condition occurs almost exclusively on the hands, occasionally on the feet, but almost never elsewhere on the body. The particular regions are the periungual areas and over the knuckles and the thenar eminences. The initial lesion may resemble a torpid phlegmon, and, when seen as such, the evolution cannot be predicted. Most commonly it begins as a deep seated rather ill defined bluish red node. Scales form early, and the lesion enlarges and tends to exhibit zones, the central portion becoming soft and even pustular, encircled by a warty ring and outside of this a halo of dusky red inflammation which fades off into the surrounding skin. The degree of verrucosity varies a great deal, as do the other elements, depending on the size, rate of growth and location of the lesion.

Patients in whom tuberculosis verrucosa cutis develops have had tuberculosis previously and are therefore in a state of allergy; otherwise a positive reaction to inoculation would in all likelihood bring about a different type of lesion—a primary complex; since the verrucous type of tuberculosis of the skin is so benign, the patients also have a high degree of resistance. The disease occurs oftenest in adult men and rarely in children.

The lesion progresses in a centrifugal manner, which results in an annular or, at times, serpiginous lesion. Having attained a certain size, the lesion becomes stationary, and further changes occur only within the lesion. The center sinks, some scarring takes place and activity is noted at the borders and in a few islands within the lesion. The warty elevations vary somewhat in height and breadth, and there often is some crusting because of coagulated secretion. At times the lesion becomes converted into a thin scar, with activity confined to the periphery. Ascending lymphangitis and tuberculous adenitis of the adjacent nodes are possible complications, and, just as lymph stasis may occur in certain cases of lupus vulgaris, it may be noticed in patients with tuberculosis verrucosa cutis, the part becoming boggy and enlarged. The condition is chronic, and although it becomes stationary there is an effort on the part of the body to heal the lesion by scar formation; it does not heal spontaneously and may remain active for a long period; on the other hand, the lesions respond well to properly directed treatment. Roentgen therapy or some form of coagulative destruction are the treatments most often recommended.

The histologic observations are at times confusing because of the presence of acute or chronic inflammatory elements superimposed about areas of tuberculoid structure. Hyperkeratosis and a tuberculous type of tuberculoid structure must be present to permit one to diagnose the condition microscopically. At times the tuberculous infiltrate predominates, with few other elements present, while in other sections it is only with difficulty that one finds small areas of tuberculoid structure. Occasionally small areas of tuberculoid structure are entirely encircled by the hyperkeratotic epidermis. The degree of hyperkeratosis may be great, even forming horny cysts, but without some degree of hyperkeratosis a diagnosis of tuberculosis verrucosa cutis is not tenable. Caseous necrosis is absent.

The condition is relatively benign, but the danger of extension to the lymphatics must be kept in mind.

The criteria for diagnosis are:

1. Occurrence principally on the hands
2. Slow development after history of certain types of injury
3. Consideration of the occupation of the patient (physician, veterinarian, butcher)
4. Verrucous lesion
5. Microscopic section (difficult diagnosis)
6. Demonstrate tubercle bacilli by smear or animal inoculation
7. Tuberculin reaction

One should search for tuberculosis.

THE TUBERCULIDS

The existence of any of the tuberculids is based on an assumption that at some moment in the life of a person infected with tuberculosis, the bacilli became labile and reached the skin, which having become sensitized, reacted to the presence of the bacilli to a pronounced degree, thereby producing a lesion. The lesion is dependent on the state of allergy, the number and virulence of the organisms and possibly the depth and size of the blood vessels where the bacilli are lodged at the time the "id" reaction takes place. It is also assumed, and with considerable good evidence, that the bacilli are killed by the "id" reaction, so that the lesion is the result of the energetic tissue response and not due to continued growth of the bacilli. Hence tuberculids are individual lesions and do not extend contiguously; they tend to heal in a rather short time, and because of the intensity of the reaction, with resultant necrosis, they usually heal with a scar.

In order to comprehend the production of tuberculids, one must understand the immunobiologic aspects of tuberculosis as accepted today. All tuberculids are probably hematoembolic processes. The resulting morphologic lesion depends on many factors, but the anatomic location, both minute and regional, must play an important role in the appearance of the clinical lesion. I shall not review the well known facts concerning tissue reactions to the tubercle bacillus, for here we are concerned only with the diagnosis of the resulting cutaneous lesions. It is desirable, however, to view every tuberculid as a new inoculation, for the lesion to some degree approximates the second inoculation type of lesion seen in experimental tuberculosis. It is difficult to understand why tuberculids develop in a patient who has a subclinical or clinical type of systemic tuberculosis. What controls the time of onset? Why does the sowing of bacilli cease? Why are certain areas of the body so commonly involved while other parts are almost never the seat of a lesion? Is the bacillemia constantly present, or is it transitory? There are so many perplexing problems connected with the pathogenesis of the tuberculid that we can only accept what little evidence has been advanced and wait for further developments.

The tuberculids comprise a group of clinical conditions and therefore have had many different names applied to each type. It would simplify our understanding of the tuberculids if we would realize that they are all papular lesions, varying in size and in secondary changes. Since there is a surprising monomorphism in individual cases, mixtures of types, for example, lichen scrofulosorum (squamous papular tuberculid) and acnitis (necrotic papular tuberculid), are rarely seen; the conditions which predispose to a certain variety must be fairly well fixed even if we do not know what they are.

The microscopic appearance of a tuberculid is dependent on two factors: (1) the specific tissue response and (2) the secondary changes. Initially, there must be the reaction against the tubercle bacillus that one expects in an allergic subject (he must be allergic if one adheres to the theory of hematogenous sowing from an established internal focus), for infection with tubercle bacilli confers on a subject a property which the organism did not possess prior to the infection. This property, which is called allergy, increases the reactivity to subsequent infection or inoculation. The degree of allergy varies. It may be weak or strong or may even disappear, but of all species subject to infection with tubercle bacilli, I know of no species in which the reaction is so intense or so lasting as it is in human beings. Thus, although the tissue response will vary, it will follow the general pattern of tissue response against tuberculosis and will eventually result in tuberculoid structure. In some tuberculids, such as the scaling lichenoid type, that is all that will be found, the secondary change being only a mild scaling, but in the larger more intense legions, like the necrotic papular tuberculids, the central portion of the reaction in the lesion is so great that necrosis results, producing a core about which tuberculoid structure is found. Hence, in the necrotic tuberculids, the two elements—one specific and the other secondary—are to looked for. The microscopic diagnosis of tuberculids is difficult. Many diverse morphologic combinations may be found, but tuberculoid structure, preferably of the kind seen in tuberculosis, must be present in order for one to venture the diagnosis of tuberculid.

Just as the microscopic picture varies, so does the clinical appearance of the different kinds of tuberculids. It is not necessary to review the appearance of particular types of tuberculids, but it should be emphasized that on the pathogenesis rest certain common properties. As to be expected, the onset is rather sudden and may be exanthem-like. The lesions are usually symmetric because of the blood-borne invader. The lesions being small and superficial, they provoke practically no subjective symptoms. Because of their evolution, the lesions go through a cycle, the more torpid ones remaining papular, the more intense necrosing early. Scars often result, but some tuberculids may disappear without leaving a trace. The necrotic papular tuberculids often recur. It would therefore seem logical that the body conditions which permit the development of necrotic papular tuberculids must be similar to those which permit erythema induratum to develop. In both conditions there is often recurrence over a period of many years. Tuberculids which do not necrose apparently rarely recur, for example, lichen scrofulosorum (scaling papular tuberculid).

In summary, tuberculids occur because the infected body reacts against fresh implantations in an intense but effective manner, and the resulting lesions are more or less self limited as to size and duration. The type produced depends on many factors which one can hardly conjecture about, let alone prove.

The criteria for the diagnosis of the tuberculids may be applied to all types. They are:

1. Rather sudden onset
2. Symmetry
3. Fairly rapid evolution
4. Self-limited course
5. Areas of predilection for each type
6. Tuberculin reaction usually positive
7. Microscopic evidence of tuberculosis

A search for tuberculosis should be made.

SUMMARY

It should constantly be borne in mind that tuberculosis of the skin is the result of an integumentary reaction against infection with a specific organism and that the facts which have been accumulated about tuberculosis in general may be applied in a somewhat restricted manner to tuberculosis of the skin.

Because the morphologic entities which are now looked on as tuberculoderms were discovered and described individually and were included in the general category of tuberculosis long after their initial recognition, it is easily understood why they have been treated as entities rather than members of a group. This has resulted in a vast descriptive literature, in redundant minute differentiations and in a virtual neglect of the most important fact that tuberculosis of the skin is only a form of tuberculosis; just as tuberculosis in other organs produces a variety of clinical types, so does it also in the skin.

One must constantly keep in mind the hard gleaned facts about tuberculous infection. One must constantly contemplate the changing picture of the tissue response, and one must appreciate that the reaction of the human organism against the tubercle bacillus is discontinuous, so that the degree of resistance, and possibly immunity and allergy, is constantly changing. If a subject is going to be the victim of cutaneous tuberculosis, the particular type of lesion probably is dependent on the precise moment of the phase in the battle between the invader and the host when inception of the lesion takes place. Since the resulting lesions are diverse, both as to type and course, it seems best to continue to apply designating names rather than to use an over-all term, but one must not forget that one is dealing with tuberculosis.

PENICILLIN TREATMENT OF SUBACUTE BACTERIAL ENDOCARDITIS

Report of Eighteen Consecutive Cases

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Prior to the use of chemotherapeutic agents, subacute bacterial endocarditis was rarely if ever cured. With the increasing use of sulfonamide compounds in the treatment of this condition, series of cases were reported in which apparent cures were achieved in approximately 5 per cent of patients treated.[1] Recent experience with penicillin in a number of well substantiated series[2] indicates that the percentage of patients cured is substantially higher than among patients treated with sulfonamide compounds. It is the purpose of this communication to show the results of penicillin therapy in 18 consecutive cases of subacute bacterial endocarditis.

CLINICAL DATA

Selection of Cases.—In the two year period from Jan. 1, 1944 to Dec. 31, 1945, 18 patients with subacute bacterial endocarditis were admitted to St. Luke's Hospital. The diagnosis was established in each instance by the clinical history, physical findings and repeated positive blood cultures.

Table 1 shows the clinical data in the series of patients.

Age and Sex.—Ten patients in this series were males and 8 patients were females. Their ages varied from 6 to 77 years. The average age of patients in this series was 39.2 years.

Primary Cardiac Disease.—Three patients had congenital cardiac defects. Eleven patients had underlying rheumatic heart disease. Underlying arteriosclerotic heart disease was present in 2 cases. In 2 cases the etiology of the underlying cardiac lesion was not determined.

Infecting Organism.—In 16 cases the organism isolated was the Streptococcus viridans. In 1 case an undifferentiated streptococcus was revealed. In 1 case a pleomorphic streptococcus was found.

Duration of Infection.—The apparent duration of infection in each case varied between three weeks and seven months. It is of interest to note that failures and deaths occurred in cases in which infection had existed longer than six weeks. Yet in 2 cases an infection of at least five months' duration was arrested.

Penicillin Sensitivity.—The recovered organism was tested in 17 cases for its sensitivity to penicillin in various dilutions. The method used was a serial dilution technic used at the Brooklyn Jewish Hospital. The original sensitivities varied between 0.008 and 0.15 unit per cubic centimeter. The response to treatment could not be predicted from the original sensitivity of the organism. Failures occurred in those cases in which the penicillin sensitivity was more than 0.03 unit per cubic centimeter. In 3 patients who relapsed there was a gradual increase in the resistance of the organism.

Penicillin Blood Levels.—During the course of therapy, penicillin serum levels were determined in 15 patients, and these were used to gage the adequacy of penicillin dosage. It was our aim to maintain the serum concentration well above the sensitivity of the isolated organism, preferably five to ten times the level required to inhibit the organism's growth in vitro.

Method of Administration, Dosage and Duration of Penicillin Therapy.—The usual method of administration of penicillin was by continuous intravenous infusion. The daily dosage was dissolved in 1,000 cc. of isotonic sodium chloride solution and the drip regulated to deliver this volume in twenty-four hours. By refinement of intravenous technic, new short 23 gage needles being used, the veins of the hand and forearm were utilized. The arm was splinted below the elbow with individually fitted padded plaster half casts. Such an arrangement is comfortable and allows movement of elbow and shoulder. In certain cases the development of congestive heart failure necessitated the use of 5 per cent dextrose solution in distilled water as the vehicle. The most annoying obstacle to the use of intravenous administration has been frequent local thrombophlebitis at the site of venipuncture.

This was partially reduced by changing arms every three to four days. In some cases the concomitant

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Dr. Herring is attending physician, Medical Service, and Dr. Davis is former resident physician, Medical Service.

Because of lack of space this article is abbreviated in THE JOURNAL by the omission of 3 of the 5 reports of cases originally included.

[1] Lichtman, S. S., and Bierman, W.: Treatment of Subacute Bacterial Endocarditis: Present Status, J. A. M. A. **116:** 286 (Jan. 25) 1941. Lichtman, S. S.: Treatment of Subacute Bacterial Endocarditis: Current Results, Ann. Int. Med. **19:** 787, 1943.

[2] Bloomfield, A. L., and Halpern, R. M.: Penicillin Treatment of Subacute Bacterial Endocarditis: Some Problems, J. A. M. A. **129:** 1135 (Dec. 22) 1945. Christie, R. V.: Brit. M. J. **1:** 381, 1946. Dawson, M. H., and Hunter, T. H.: Treatment of Subacute Bacterial Endocarditis with Penicillin: Results in Twenty Cases, J. A. M. A. **127:** 129 (Jan. 20) 1945; Ann. Int. Med. **24:** 170, 1946. Favour, C. B.; Janeway, C. A.; Gibson, J. T., II, and Levine, S. A.: New England J. Med. **234:** 71, 1946. Flippin, H. F.; Maycock, R. L.; Murphy, F. D., and Wolferth, C. C.: Penicillin in Treatment of Subacute Bacterial Endocarditis: Preliminary Report on Twenty Cases Treated Over One Year Ago, J. A. M. A. **129:** 841 (Nov. 24) 1945. Glaser, R. J.; Smith, R. O.; Harford, C. G., and Wood, W. B., Jr.: J. Lab. & Clin. Med. **31:** 291, 1946. Goerner, J. R.; Geiger, A. J., and Blake, F. G.: Ann. Int. Med. **23:** 491, 1945. Loewe, L.; Rosenblatt, P.; Greene, H. J., and Russell, M.: Combined Penicillin and Heparin Therapy of Subacute Bacterial Endocarditis: Report of Seven Consecutive Successfully Treated Patients, J. A. M. A. **124:** 144 (Jan. 15) 1944. Loewe, L.: The Combined Use of Anti-infectives and Anticoagulants in the Treatment of Subacute Bacterial Endocarditis, Bull. New York Acad. Med. **21:** 59, 1945. Meads, M.; Harris, H. W., and Finland, M.: New England J. Med. **232:** 463, 1945. Mokotoff, R.; Brams, W.; Katz, L. N., and Howell, K. M.: Am. J. M. Sc. **211:** 395, 1946. Paulin, J. E., and McLoughlin, C. J.: Ann. Int. Med. **22:** 475, 1945. Ward, G. E. S.; Meanock, R. I.; Selbie, F. R., and Simon, R. D.: Brit. M. J. **1:** 383, 1946. Meyer, O. O., and Thill, C. J.: J. Clin. & Lab. Med. **31:** 487, 1946. Massell, B. F., and Jones, T. D.: New England J. Med. **235:** 605, 1946.

TABLE 1.—*Clinical Data in 18 Cases of Subacute Bacterial Endocarditis*

Case No.	Sex	Age	Primary Cardiac Disease	Penicillin Sensitivity of Organism, Units/Cc.*	Approximate Duration of Infection	Dates of Treatment	Daily Penicillin Dosage	Route	Days	Total Penicillin Dosage	Heparin	Results of Treatment	Present Status and Follow-Up
1	M	28	C.H.D.**	0.017	5 months	3/29/44	200,000	CIV†	11	2,800,000	No	Relapsed	Well for 20 months with negative blood culture
						6/12/44	250,000	CIV	28	7,000,000	Yes	Arrested	
				0.125	2 months	6/ 3/46	5,000,000	CIV	37	185,000,000	Yes	Arrested	Well; 5 months
2	M	51	R.H.D.‡	.....	5 months	4/20/44	200,000	CIV	14	2,800,000	No	Relapsed	Died 7/21/44; autopsy showed active infection
3	M	65	Uncertain	0.06	3 months	6/ 7/44	200,000	CIV	16	3,100,000	Yes	Arrested	Died July 1945, "stroke"; apparently well for 11 months; no autopsy
						6/23/44	300,000	CIV	6	1,800,000	Yes		
						7/27/44	240,000-320,000	IIM§	9	2,240,000	No		
									31	7,140,000			
4	F	50	R.H.D.	0.125	3 weeks	6/21/44	300,000-500,000	CIV	10	3,600,000	Yes	Arrested	Well; 30 months
						7/ 4/44	500,000	CIV	20	9,900,000	Yes		
									30	13,500,000			
5	M	13	C.H.D.	0.008	Uncertain	8/14/44	200,000-300,000	CIV	11	3,800,000	Yes	Arrested	Well; 26 months
6	F	18	R.H.D.	0.008	5 months	9/ 3/44	200,000-300,000	CIV	28	6,000,000	Yes	Arrested	Lived 15½ months; died 1/5/46; no autopsy
7	M	34	R.H.D.	0.008	2 months	9/20/44	200,000-300,000	CIV	28	7,500,000	Yes	Arrested	Died 11/15/44, the day of discharge from hospital; no autopsy
8	M	58	A.S.H.D.¶	0.015	4 months	10/25/44	160,000	IIM	11	1,820,000	No	Died	Died 11/15/44 during treatment; autopsy showed active healing infection
9	F	36	R.H.D.	0.06	3 months	11/13/44	300,000-400,000	CIV	28	9,700,000	Yes	Relapsed	Well; mild cardiac insufficiency; 22 months
						1/25/45	400,000	CIM‖	28	11,200,000	No	Arrested	
									56	20,900,000			
10	F	28	R.H.D.	0.015	6 weeks	11/ 9/44	200,000-300,000	CIV	28	6,000,000	Yes	Arrested	Well; 12 months
11	F	77	A.S.H.D.	0.06	2 months	12/22/44	200,000	IIM	5	1,000,000	No	Relapsed	Died 2/23/45; autopsy revealed active infection
						12/27/44	200,000-300,000	CIV	23	5,500,000	Yes		
									28	6,500,000			
12	F	56	R.H.D.	0.06	3 weeks	3/ 4/45	400,000	CIM	36	14,400,000	No	Arrested	Well; moderate cardiac insufficiency; 20 mo.
13	F	24	R.H.D.	0.03	3 weeks	5/12/45	300,000-500,000	CIM	28	9,800,000	No	Arrested	Well; 18 months
14	M	52	Uncertain	0.03	6 weeks	7/ 4/45	120,000	IIM	28	3,240,000	No	Arrested	Well; 14 months
						7/31/45	400,000-3,000,000	CIM	57	70,200,000	No		
						10/17/45	240,000	IIM	17	4,080,000			
									101	77,520,000			
15	F	6	C.H.D.	0.06	7 months	9/25/45	100,000-200,000	CIM	28	4,000,000	No	Relapsed	Living, but ill; infection still present
						11/ 8/45	400,000	CIM	42	16,800,000	No	Relapsed	
						12/20/45	800,000	CIM	31	24,800,000	No	Relapsed	
						1/20/46	2,000,000	CIM	26	52,000,000	No	Relapsed	
						3/ 4/46	2,000,000	CIM	49	98,000,000	No	Relapsed	
						5/15/46	5,000,000	CIV	58	290,000,000	No	Relapsed	
						8/30/46	Streptomycin, 2.0 Gm. daily		21	Total: 42 Gm.			
						11/ 1/46	Streptomycin, 2.0 Gm. daily		14	Total: 28 Gm.			
							plus 5,000,000	CIV	20	100,000,000	No	Relapsed	
									254	586,000,000			
16	M	28	R.H.D.	0.06	2 weeks	11/ 3/45	400,000-800,000	CIM	13	8,000,000	No	Arrested	Well; 13 months
						11/16/45	400,000-600,000	CIV	28	16,600,000	No		
						12/24/45	400,000	CIV	8	3,200,000	No		
									49	27,800,000			
17	F	35	R.H.D.	0.015	2 months	10/17/45	160,000	IIM	6	1,120,000	No	Arrested	Well; 13 months
						11/16/45	400,000-800,000	CIM	35	19,400,000	No		
									41	20,520,000			
18	M	47	Uncertain	Approx. 0.015	6 weeks	12/ 8/45	400,000	CIV	35				
							240,000	IIM	7	15,520,000	No	Relapsed	Died 12/24/46; obvious active infection; no autopsy
						1/30/46	500,000	CIV	7				
							1,000,000	CIV	14	58,000,000	Yes	Relapsed	
							2,000,000	CIV	21				
						3/28/46	4,000,000	CIV	52	208,000,000	Yes	Relapsed	
						5/28/46	5,000,000	CIV	6				
							10,000,000	CIV	42	452,000,000	Yes	Relapsed	
						7/20/46	Streptomycin, 2.0 Gm. daily		21	Total: 42 Gm.		Relapsed	
						8/18/46	Streptomycin, 2.0 Gm. daily		14	Total: 28 Gm.			
							plus 10,000,000	CIV	10				
							20,000,000	CIV	14	380,000,000	Yes	Relapsed	
									208	1,114,020,000			

* The organism in case 7 was an undifferentiated streptococcus and in case 18 was a pleomorphic streptococcus. In the other 16 cases it was Streptococcus viridans.

** Congenital heart disease.

† Continuous intravenous infusion.

‡ Rheumatic heart disease

§ Interrupted intramuscular injection.

¶ Arteriosclerotic heart disease.

‖ Continuous intramuscular infusion.

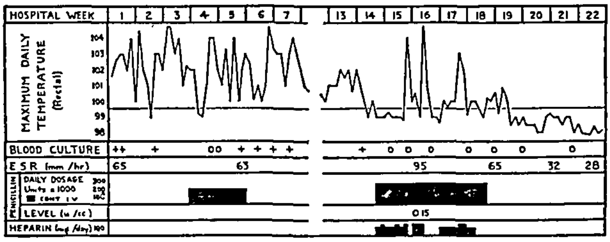
use of heparin appeared to decrease local thrombophlebitis.

Continuous intramuscular drip was used for the entire period of treatment of 5 patients with excellent results. It was also used for variable periods in 4 other patients. The daily volume of sodium chloride solution with intramuscular drip was 500 to 1,000 cc. In some cases there were considerable local reactions at the needle site. This difficulty was more frequent and severe with large doses of penicillin.

Interrupted intramuscular injections of penicillin were used for short periods of time in patients in whom the continuous intravenous or intramuscular drip had to be discontinued temporarily.

A four week course of penicillin was given in the majority of cases. The daily dosage of penicillin varied from 200,000 to 500,000 units. With patients who relapsed much larger doses were given in longer courses. The total amount of penicillin administered to any single patient ranged between 2,800,000 and 1,114,020,000 units.

Heparin.—Heparin was used in 9 patients. In 4 patients it was employed throughout a successful course of penicillin. In 3 patients heparin was employed during only part of a course. In case 9 it was used during a first unsuccessful course of treatment and omitted during a second successful course. In case 18, heparin was administered during several of the patient's multiple courses of penicillin.



This illustrates failure with one short course of treatment followed by successful arrest of infection with a four week course of penicillin. This patient was again treated successfully twenty months later for a second episode of subacute bacterial endocarditis which was apparently a reinfection. (Case 1).

The daily dose of heparin varied between 50 and 250 mg. It was incorporated in the penicillin infusion. The coagulation time was determined at least once daily by the Lee-White method and was kept between thirty and sixty seconds by varying the dosage. In case 18 heparin was also used in small doses for local anticoagulant effect in an effort to avert local thrombophlebitis at the site of intravenous administration of large doses of penicillin. No hemorrhagic phenomena attributable to heparin were noted. Three patients had febrile and systemic reactions of a sensitivity type which seemed to be due to heparin.

SUMMARIES OF CASES

Two representative case summaries from the series are presented.

Case 1 (the chart).—W. H., a man aged 27 years with a known heart murmur since the age of 7, enjoyed excellent health until eight months prior to admission, when he had left-sided pleurisy for two weeks. Three months later he left work because of increasing fatigue, followed by anorexia, general malaise, loss of weight, night sweats and fever.

On admission, March 9, 1944, he was acutely ill, with pallor and anemia, clubbed fingers, palpable spleen and temperature of 101.4 F. The heart percussed in the right thorax with the apex impulse in the fifth right interspace 1 cm. beyond the midclavicular line. There was a harsh systolic thrill and murmur over the base of the heart just to the left of the sternum.

Angiographic studies with intravenous iodopyracet injection showed a dextroplaced heart, an interauricular septal defect, pronounced dilatation of the pulmonary arteries, but no transposition of the cardiac chambers.

The patient ran a spiking temperature to as high as 105 F., and three blood cultures were positive for S. viridans. March 28, continuous intravenous infusion of 200,000 units of penicillin daily was started. On the second day of therapy a pulmonary infarct occurred. Temperature continued to be elevated during treatment. Penicillin could be administered for only two weeks because limited supplies were available at that time. Blood cultures taken the last day of treatment and subsequent culture grew S. viridans.

During the next six weeks the patient continued to be acutely ill with fever, a second pulmonary infarct and cardiac enlargement. The sensitivity to penicillin of the organism recovered from blood culture was found to be 0.047 unit per cubic centimeter. June 12 penicillin was resumed in a daily dosage of 250,000 units by continuous infusion. Heparin was also given in dosage of 100 to 150 mg. daily. Penicillin was continued for twenty-eight days, and the patient received a course of 7,000,000 units.

The patient's temperature was normal from the second day of treatment on, except for several spikes to 104 and 105 F. Difficulty was experienced in obtaining the same brand of heparin for this patient, and the fever may have been caused by the use of the product of several different manufacturers. Blood cultures taken during treatment and all subsequent cultures were negative. The patient had an uneventful convalescence.

The patient returned to full time work and was in good health for the next twenty months. He attended clinic regularly. In May 1946, he entered the clinic with a two month history of weight loss and fatigue. Blood culture was found to be positive May 28.

On admission June 1 the patient appeared moderately well. The cardiac findings were unchanged since the previous admission. The spleen tip was palpable.

The patient had a low grade fever and blood cultures grew S. viridans, the penicillin sensitivity of which was 0.125 unit per cubic centimeter. June 3 the continuous intravenous administration of 5,000,000 units of penicillin with 50 mg. of heparin was started and continued for thirty-seven days. Blood cultures taken June 17 was positive after ten days of incubation. Other blood cultures were negative and the patient's course was uneventful. He received a total of 185,000,000 units of penicillin.

Since discharge the patient has remained in good health. Blood cultures have been negative. He has been followed five months.

Case 18.—M. S., a groceryman aged 47, had several previous admissions to this hospital for herniorrhaphy, hydrocelectomy and left nephrectomy for chronic hydronephrosis. There was no history of cardiac disease, although a harsh apical systolic murmur was noted on the last admission in 1941. Six weeks before admission the patient experienced pain in the left hip and shoulders accompanied by mild anorexia, loss of weight and malaise.

Examination on admission, Nov. 26, 1945, revealed a thin, chronically ill man with marked scoliotic deformity of the thoracic portion of the spine. The heart was enlarged and there was a harsh loud apical systolic murmur, widely transmitted.

The patient ran a swinging temperature, and five blood cultures were positive for a pleomorphic streptococcus. The organism failed to grow well on solid mediums, and sensitivity studies indicated that it was one half as sensitive to penicillin as the control strain (0.008 unit per cubic centimeter).

On December 8, the continuous intravenous infusion of 400,000 units of penicillin daily was started; it was continued for five weeks. An additional week of interrupted intramuscular doses of penicillin was given. During this week, blood cultures were again positive. Penicillin was stopped. After one week the patient's temperature began to spike daily, and four additional blood cultures were positive. A total of 15,520,000 units of penicillin had been given and blood levels were between 0.05 and 0.75 unit per cubic centimeter.

On January 30, the daily administration of 500,000 units of penicillin was resumed by continuous intravenous drip. After one week this was increased to 1,000,000 units daily with blood level of 0.75 unit per cubic centimeter. At this time local thrombophlebitis developed in the arm veins, and temporarily a continuous intramuscular drip was used. Strong local muscular reaction appeared. The continuous intravenous drip was resumed and heparin was administered in daily 50 mg. doses. Penicillin level attained was 1 unit per cubic centimeter. March 11, penicillin was stopped; a total of 58,000,000 units had been given during the second six week course.

At this point the patient's general condition was good and the situation appeared favorable. However, blood cultures again grew the same pleomorphic streptococcus and sensitivity studies indicated a several fold increase in the organism's resistance to penicillin.

On March 28, penicillin was resumed; 4,000,000 units of penicillin and 100 mg. of heparin were given daily by continuous intravenous infusion. Heparin was then omitted, and because of dental infection all teeth were extracted. Penicillin varied between 0.8 and 3.3 units per cubic centimeter. It was continued for fifty-two days, to a total of 208,000,000 units.

Blood cultures again became positive, accompanied by fever. Dr. Leo Loewe of the Brooklyn Jewish Hospital saw the patient in consultation and because of the increasing penicillin resistance of the organism suggested much higher dosage.

On May 28, penicillin was started in dosage of 5,000,000 units daily with 50 mg. of heparin daily by continuous drip. Blood cultures continued to be positive, and on June 4 penicillin was increased to 10,000,000 units daily; it was continued for forty-two days. Penicillin levels ranged between 1.5 and 12 units per cubic centimeter, well above the concomitant organism sensitivities to penicillin of 0.06 and 0.15 unit per cubic centimeter. A total of 452,500,000 units of penicillin was given during this fourth course of therapy.

Dr. Loewe reported the organism to be the type of streptococcus "s.b.e.," which he has described and found extremely resistant to penicillin. At his suggestion streptomycin was obtained and started on July 20 in daily dosage of 2 Gm. by divided intramuscular injection. With completion of the course positive blood cultures again indicated relapse. The total streptomycin received was 42 Gm.

On August 18, a further two week course of streptomycin was started. The streptomycin was given intramuscularly in daily 2 Gm. dosage. Simultaneously, a continuous intravenous infusion of 10,000,000 units of penicillin was given daily. After ten days the penicillin dosage was increased to 20,000,000 units daily and maintained for two weeks. A total dosage of 28 Gm. of streptomycin and 380,000,000 units of penicillin had been given during this fifth course. Penicillin levels varied between 5 and 43 units per cubic centimeter.

The patient's general condition was good and he was allowed to be up and about. However, continuing positive blood cultures and fever indicated persistent infection. Further strenuous therapy was decided against. The patient was discharged home.

Six weeks later the patient was readmitted to the hospital with a history of weakness, anorexia, chills, fever and pains in shoulder and neck. He appeared chronically ill and emaciated. He showed fever, and blood cultures were positive. Sulfadiazine was administered in the usual dosage. In a stormy one month course the patient went downhill rapidly; he died Dec. 24, 1946. No autopsy was permitted.

RESULT OF TREATMENT

The results of treatment in these cases may be summarized as follows: Ten patients are alive and well; 7 patients have died, and 1 patient is in relapse. An analysis of the patients who died follows:

Patient 2 received only one short course of penicillin; no further penicillin could be obtained, and he died in relapse. Patient 9 died in the course of treatment with intramuscular doses of penicillin which were inadequate because of the scarcity of the drug.

Three patients died in the immediate post-therapeutic period. Patient 12 died in relapse after a four week course of therapy failed to arrest the infection. Patient 7 died the night of discharge from the hospital after overexertion and excessive drinking. No evidence of active infection was present at discharge. Patient 18 died after receiving five courses of penicillin in massive dosage and two courses of streptomycin.

Two patients died about one year after completion of treatment. Patient 3 was well for eleven months after treatment and died of a cerebrovascular accident. Patient 6 had severe rheumatic aortic and mitral valvular disease and died in congestive heart failure fifteen and one-half months after treatment. After the arrest of her infection, she had several episodes of rheumatic fever with persistent chronic congestive heart failure. Blood cultures were consistently negative.

Apparently penicillin arrested the infection in 3 patients who died. One of these patients died of an apparently unrelated cerebrovascular accident. Two patients had severely damaged hearts with marked aortic regurgitation.

The results of treatment are tabulated in table 2.

Table 2.—*Results of Treatment*

Total cases	18
Infection arrested	13
Relapse—infection uncontrolled	4
Death during treatment	1
Alive and well (one year or more)	10
Death after apparent termination of infection	3
Total deaths	7

We were able to control the infection in approximately 75 per cent of the cases in our series. The remaining 25 per cent were treatment failures who died during the course of therapy or patients whose infecting organism proved resistant to penicillin. Among the 75 per cent in whom the infection was controlled there were 3 subsequent deaths. In our series 10 patients, or 55 per cent of the original series, are alive and well after a year or more.

Case 1 is of particular interest. This patient recovered from a first illness and was well for twenty months. Then for the second time typical manifestations of subacute bacterial endocarditis developed. Streptococcus viridans was recovered from the blood. He was treated successfully and has been well for five months.

COMMENT

A comparison of the results of treatment in our series with those of other clinics indicates that they are similar.[2] Approximately 25 per cent treatment failures are reported by most observers. This figure appears difficult to reduce. It is questionable whether the fatal embolic phenomena that occur can be averted. They appear to be no less frequent in heparin-treated patients. The cardiac complications that occur during treatment, such as congestive heart failures and arrhythmias, can be minimized if promptly recognized and treated. The hope for improving the number of cures appears to be in the recognition of those cases the organism in which has an initial high resistance to penicillin and which will require massive doses of penicillin. The recent report of Loewe[3] concerning the isolation of a penicillin-resistant streptococcus which he has called

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3. Loewe, L.; Plummer, N.; Niven, C. F., Jr., and Sherman, J. M.: Streptococcus s.b.e. in Subacute Bacterial Endocarditis, J. A. M. A. 130: 257 (Feb. 2) 1946.

"streptococcus s.b.e." is of interest. The fact that during treatment the recovered organism frequently shows increasing resistance to penicillin indicates the need for an initial dosage of penicillin which is sufficiently high to assure effectiveness. In our series failures occurred in those patients whose organisms showed a penicillin sensitivity of more than 0.03 unit per cubic centimeter. Several patients responded satisfactorily although their organisms showed penicillin sensitivities greater than this figure.

During the therapeutic course of penicillin it is difficult to judge the effectiveness of treatment. During the administration of penicillin, negative blood cultures and other signs of clinical improvement are usual. Persisting fever and elevated sedimentation rate may not be unfavorable signs, since both can be caused by many factors other than persistent infection. The only method of judging the effectiveness of treatment is a period of observation at the end of a course of penicillin. In cases in which relapse occurred, signs of relapse and positive blood cultures appeared within the initial two week period following cessation of therapy.

Most patients will apparently respond to a daily dosage of 500,000 units of penicillin. However, because the in vitro sensitivity of the organism does not give an accurate measure of the in vivo bactericidal level, much larger doses are recommended. We believe all patients should receive at least 2,000,000 units of penicillin daily in a six week course. If the penicillin sensitivity is greater than 0.06 unit per cubic centimeter, daily doses of 5,000,000 units or more are indicated at the onset.

We cannot recommend the routine use of combined penicillin and heparin treatment. In this small series the results were inconclusive and failed to show any definite benefit from the use of heparin. In view of the difficulties of administration and the possible dangers of heparin, it has been used recently for two purposes. It has been used in cases of extremely resistant disease as an additional, possibly beneficial measure when previous courses of penicillin have failed. It has also been used in small doses for its local anticoagulant effect to prevent thrombophlebitis when large doses of penicillin were being given intravenously.

The method of administration of penicillin is much discussed. From the reported series, it is apparent that the different methods used give much the same degree of success. Our familiarity with the continuous intravenous technic leads us to favor it. The continuous intramuscular drip appears to be equally effective in our hands.

SUMMARY

A series of 18 cases of subacute bacterial endocarditis treated with penicillin is reported. In 13 of the patients the infection was arrested. Ten of the patients are alive and have been well over a period of at least a year. The results of treatment and failures are discussed.

A patient who has recovered satisfactorily from two separate episodes of subacute bacterial endocarditis separated by twenty months of apparent good health is reported.

The use of 2,000,000 units of penicillin daily in all cases is recommended. In patients with more resistant organisms doses of 5,000,000 units or more of penicillin should be used.

The administration of penicillin by continuous intravenous or intramuscular drip is recommended.

The combined use of penicillin and heparin offers no definite benefits and is not recommended.

CURRENT PHARMACOLOGY

General Principles in Practical Clinical Application

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In acquiring more precise pharmacologic knowledge about chemicals used in medicine, the alert physician is able more satisfactorily to apply such information for the benefit of his patients, whether in the diagnosis, prevention or treatment of disease. In spite of the great numbers of useful new drugs being introduced into medicine for various purposes, the most important development of current pharmacology is theoretical, in connection with the establishment of general principles. An acquaintance with general principles of pharmacology, especially as developed by Clark,[1] is being recognized as increasingly helpful in the practical clinical use of drugs.

It may seem peculiar to the hard-headed clinician not to offer any specific information in this discussion about any particular drug. He may ask what value it is to him in trying to help his patients to have some general ideas about time-concentration relationships, since what he wants to know is how much of which drug to use when. The answer is that knowledge of the general principles of pharmacology aids in the choice and most efficient use of chemicals appropriate for the particular clinical situation with which he may be concerned. It is of practical help in judging the use of drugs to understand the factors involved in the intensity of drug action, to know something of the general principles of dose-effect and time-concentration relationships and to realize something of the mechanisms of drug action. While new terminology in technical matters may be strange and confusing at first, the direct intellectual effort put into its comprehension will aid greatly in its effective use. The intelligent grasp of the general principles of current pharmacology and of the basic concepts involved will promote more intelligent, more effective and more economical use of drugs, with greater satisfaction for patient and physician.

Thousands of chemicals are available for clinical use. New drugs are continually being developed and exploited. While crude drugs, comprising uncontrolled chemical mixtures from natural sources, are diminishing in number and importance, new synthetic chemicals for medical use are increasing in quantity and value. Frequently the clinical use of drugs is not satisfactorily established on the basis of demonstrable biologic action. Physicians are often fooled over claims made for drugs. An understanding of a few simple general principles regarding the appraisal of drugs will help the average physician to judge for himself the value of data offered him by the well coached detail men who try to persuade him to use new drugs in which there may be large commercial interest.

It is difficult to attempt to derive general principles regarding drug action from the vast amount of detailed knowledge and opinion which has accumulated for individual drugs. Nevertheless such generalities may be highly significant for the intelligent physician

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Read in the General Scientific Meetings at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 21, 1948.

[1] Clark, A. J.: The Mode of Action of Drugs on Cells, Baltimore, Williams & Wilkins Company, 1933; General Pharmacology, in Heffter, A.; Heubner, W., and Shüller, J.: Handbuch der experimentellen Pharmakologie, Berlin, Julius Springer, 1937, vol. 4.

in evaluating drug action and in determining the indications for appropriate drug use. Such principles may offer the discriminating physician reliable guides for judgment and choice of regimen in clinical situations in which chemicals may help.

THE DEVELOPMENT OF PHARMACOLOGY

Pharmacology is the study of the action of chemicals on living things. The action may be beneficial or harmful, and the living things may be plant or animal. Pharmacology is thus a broad scientific discipline. It is chiefly applied in medicine. However, other applications are rapidly developing in agriculture, industrial hygiene, law and even in sociology. Pharmacology is closely related to other scientific disciplines, such as biochemistry, biophysics, physiology, microbiology, pathology and pharmaceutic chemistry.[2]

It is necessary to differentiate the study of the action of drugs from the proposition of the practical use of drugs in medicine. The process of acquiring verifiable and agreed-on knowledge of the action of chemicals on living things is a scientific matter. The application of this knowledge to the benefit of a particular sick patient is an artistic venture, calling for the exercise of judgment, discrimination and choice. In modern medical teamwork science and art complement each other. When chemicals are concerned, the pharmacologists of the team represent science and are responsible for acquiring verifiable knowledge about the action of chemicals on living things, while the physicians on the team represent the art, and are responsible for the wise and judicious application of the knowledge available to accomplish benefit to the patient. To succeed, physicians must possess and appreciate the knowledge and understand the principles of its application.

Pharmacology began anciently with observations of the action of crude plant, animal and mineral materials when tried for food. Primitive and isolated peoples all over the world developed an elaborate folk lore regarding the application of such observations to disease. Most of these applications were sensible. Thus the Modoc Indians in Northern California observed that the eating of the bark of a certain tree produces purgation. They then rationally used this bark when constipated. The ancient Egyptians formulated their slowly acquired drug lore into recipe books, which recommended the use of various preparations in various clinical conditions.[3] These recipes were copied and expanded by the Greeks and Romans, frequently combined into complex prescriptions by Arabian and medieval physicians, and finally were subjected to increasingly careful analysis beginning with the rise of modern chemistry.

Modern pharamacology began in the eighteenth century with the establishment of chemistry on a quantitative basis. Crude drug mixtures could then be analyzed for their active principles. Serturner (1783-1841) in Germany isolated a sleep-producing crystalline material from opium which he called morphine, with reference to the Graeco-Roman god of sleep. This was followed by the isolation of many other alkaloids and, later, of other types of active principles, including those found in vitamins, hormones, antibiotics and even in biologic preparations for immunology.

Not satisfied with active chemical agents found in nature, pharmocologists began to try to improve on them, in order to increase the desired effect and reduce toxicity. The success with which this may be accomplished was first clearly shown in the many synthetic local anesthetics which are such an improvement over the naturally occurring cocaine. It is necessary first to identify the active principle chemically. Often this is an arduous job. But it has been successfully accomplished, even with such complex compounds as the alkaloids, steroids, hormones, vitamins and antibiotics. Now by slight chemical modification, it is possible to synthesize a considerable series of related compounds, in order to choose the one that is best suited for the particular purpose in mind.

The main criteria for the choice of a drug for a particular purpose are low toxicity, desired activity, prompt effect, easily controlled effect, no untoward reactions, even on frequently repeated administration, and ease of administration and manufacture.

DRUG STANDARDIZATION

In order to be certain of uniformity of clinical response to the same dose of a drug, it is necessary that the drug be standardized. This was recognized as long ago as the sixteenth century. Valerius Cordus (1515-1544) prepared a formulary for the use of the druggists of the city of Nuremberg. This was adopted by the senate of the city as the standard, to be followed by all druggists. This became then the first official pharmacopoeia.[4] The local physicians were now assured that the drugs they ordered by official name would be always the same, with unvarying characteristics. They could thus expect reasonable uniformity of effect from the same dosage of such standard preparations. The drug standards agreed on in pharmacopoeia are usually given legal support. In this country the Food and Drug Administration also protects the public from harm and exploitation in connection with new drugs.

When the active principles of crude drugs were isolated in chemically pure form, a great advance was possible in standardization, since now the crystalline material could be made to conform to specific chemical standards. A more precise relationship between dosage and effect thus became possible.

The American Medical Association at the beginning of the twentieth century established the Council on Pharmacy and Chemistry. This is composed of a group of experts who serve without remuneration. This Council examines the claims of all new drugs. It publishes annually "New and Nonofficial Remedies." To be included in "New and Nonofficial Remedies," a drug must meet certain minimum standards regarding identification, definiteness of action and restriction to reasonable claims, based on available evidence.

Physicians will find it helpful to give increasing attention to the "Pharmacopoeia of the United States" and to "New and Nonofficial Remedies." The "Pharmacopoeia of the United States" was first established in 1820 by a general convention of physicians, druggists and interested public officials. The Pharmacopoeia Convention meets regularly, and delegates are accepted from state and other medical societies. The pharmacopoeia guarantees, by legal support, that drugs offered under the name indicated in the pharmacopoeia must conform to the standards established in the pharmacopoeia. The Food and Drug Administration enforces its standards.

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[2] Leake, C. [illegible] Current Pharmacology, Univ. California Publ., [illegible] 8.

[3] Leake, C. [illegible] Therapeutics, Ciba Symposia 1: 311-322, 1940.

[4] Schelenz, H.: Geschichte der Pharmazie, Berlin, J. Springer, 1904

The full value of establishing drug standards in any political area depends on three factors, which physicians should be prepared to support: (1) agreement on what constitutes the standard of reference, (2) agreement on the definition of the drug and on adequate methods of estimating its purity and (3) agreement on enforcement of the standard. The important problem is to obtain agreement. Although difficult, agreement regarding drug standards has been achieved on an international level, and this may well be considered the major accomplishment of the League of Nations. The successful intelligent use of drugs is impossible without an appreciation of the importance of drug standardization.

The use of public names of drugs is important to the physician. It means much saving in money. A chemical agent sold under a "trade name" may cost ten times as much as the same drug sold under a public name. It is important for physicians to know the public names, if available, of proprietary drugs and to use such drugs under public names.[5] When physicians do a lot of dispensing it is economical to use drug names as listed in the pharmacopoeia and when using combinations of drugs to follow the formulas in "The National Formulary."

When new drugs are developed for medical use, there is a systematic way of appraising their value.[6] This should begin with an exhaustive study of toxicity on single and repeated dose. All phases of possible toxic action should be analyzed and described for the benefit of the physician. There should then be offered full information on rates and ways of absorption into the body. What happens to the drug in the body should be studied and described. The physicians should be informed regarding the rate of detoxification and the rate and mode of excretion. General and special pharmacologic properties should be described in detail. This information should be offered in comparison with related and commonly used chemicals offered for the same purpose. The physician is then in a reasonable position to judge for himself what may be the best drug, in a series of related compounds, for the particular purpose he has in mind. It is this sort of evidence that the physician should insist on receiving from commercial pharmaceutic concerns. He should be offered more straight information regarding what a drug does and how it acts than persuasive suggestions for what clinical conditions to use it. The physician's judgment should tell him for what purposes to use a drug. It is not the function of commercial pharmaceutic concerns to tell a physician how to practice medicine. It is their responsibility, however, to give the physician full scientific information regarding the drug they are interested in promoting.

When a drug has been thoroughly studied in a scientific manner, it may be ready for controlled clinical evaluation. In this it is essential to take into account the natural history of the particular diseased condition in which it is proposed to study the drug. The clinical investigator must estimate the healing power of nature in respect to the particular disease with which he is dealing. He must also beware of the logical fallacy of confusing sequence of events with cause and effect. If there is sound clinical evidence to support the scientific background of the drug, there may be justification for its inclusion in "New and Nonofficial Remedies" and its being offered to physicians for general clinical use. But physicians should insist always on having this information, and they should then appraise for themselves the evidence regarding the drug.

FACTORS MODIFYING DRUG ACTION

The chief factors modifying drug action are dosage, the ratio of the rate of absorption of the drug through the body to the rate of its destruction or excretion, the physical-chemical properties of the drug and the individual peculiarities of the particular patient to whom the drug is given. The relation of these factors to the intensity of drug action may be indicated by the shorthand formula:

$$I = (f)\, D\, \frac{rA}{rE}, P, S$$

where I is the intensity of drug action, D is dosage, rA is rate of absorption or distribution of the chemical through the living tissue involved, rE is the rate of excretion or removal of the drug from the living tissue concerned, P is the physico-chemical properties of the drug and S is the peculiar individual characteristics and sensitivities of the particular patient or living tissue concerned.

By dosage is meant mass of chemical per mass of body tissue excluding fat. This suggests the importance of dosage on the basis of milligrams of drug per kilogram of body weight. Many of the newer drugs are being introduced for use in this manner. Drugs with a more general and less toxic action may be given by "average dose," but for precise drug use it is wise to work out dosage in terms of milligrams per kilogram or in terms of millimol equivalents.

The mode of administration profoundly modifies dose effects. This is because the mode of administration is important in the rate of absorption of the drug. It is practically helpful for the physician to study technics of medication, in order to obtain the most satisfactory results with patients.[7] Absorption is slowest, of course, through the skin. It is next most rapid through the mucous membranes of the alimentary tract. It is important to remember the rectum as an absorbing area when it may be difficult to get satisfactory administration by mouth. Absorption of gaseous agents across the respiratory mucous membrane is very rapid. Intramuscular injection offers steady absorption for drugs in oil suspension. Parenteral administration, of course, requires aseptic precautions. Subcutaneous injection is not a particularly satisfactory method of administering drugs, but it is widely used. The most rapid distribution is obtained when a drug is given by vein. Sometimes a drug may be given into the spinal canal for particular local effects there. It is wise to remember that drugs may be absorbed from the mucous membranes of the vaginal tract, the ear or the eye.[8] Sometimes a drug given only for local effect at the point of application may be absorbed and produce a systemic reaction.

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[5] Fantus, B.: *Economy in Medication, J. A. M. A.* **110:** *880 (March* 19) 1938.

[6] Leake, C. D.: Pharmacologic Evaluation of New Drugs, J. A. M. A. **93:** 1632-1634 (Nov. 23) 1929. Van Winkle, W.; Herwick, R. P.; Calvery, O. H., and Smith, A.: Laboratory and Clinical Appraisal of New Drugs, ibid. **126:** 958-961 (Dec. 9) 1944.

[7] Fantus, B.: The Technic of Medication, Chicago, American Medical *Association, 1926. (Dr. Austin Smith, Secretary of the Council on* Pharmacy and Chemistry, has prepared a new edition of this useful practical guide.) General Technic of Medication, Chicago, American Medical Association, 1948.

[8] Macht, D.: Absorption of Drugs and Poisons Through the Skin and Mucous Membranes, J. A. M. A. **110:** 409-414 (Feb. 5) 1938.

It is helpful to know something about the rate of drug destruction or excretion.[9] This gives the clue to the important problem of how frequently to repeat administration. Many drugs, such as penicillin or the sulfonamide compounds, are rapidly excreted in the urine and require frequent administration in order to maintain the concentration necessary for effectiveness. Many drugs are detoxified by combining with amino acids in the body. When this is possible, allergic effects may occur from the drug.[10] All drugs which have a ring structure chemically, with amino groups or phenolic hydroxyl groups, may combine with amino acids and thus give rise to allergic responses in sensitized tissue. Drugs such as aspirin, amidopyrine, the sulfonamide compounds, local anesthetics and aniline derivatives may combine readily with amino acids and produce allergic effects. A physician cannot tell which patient may show the allergic reaction or where, but he should be prepared to expect such reactions in at least 5 per cent of patients given such drugs.

Strenuous efforts are being made to delay the excretion of penicillin (by giving such agents as caronamide) or to decrease the rate of absorption (by use of procaine conjugates in oil), so as to prolong the effective concentration. When we know more about the chemical makeup of penicillin we may be able to devise chemical relatives which will be more slowly excreted and so give a more lasting effect.

The physical chemical properties of drugs are important with respect to their action in the body. If the drug is more soluble in oily material than in water, it will tend to concentrate in the oily parts of the body. Those of greatest functional importance are the elements of the nervous system. Thus, most drugs acting on the nervous system have a high oil-water solubility coefficient. The redox potentials of drugs, as well as their polarity properties, are important in respect to their reaction with enzyme systems in cells. These are matters which will become increasingly significant as we learn more about them, and physicians should be prepared to acquire this new knowledge as it develops.

Highly pertinent from the physician's standpoint is the estimation of the peculiarities of his individual patient with respect to drug reaction. Age, sex, metabolic state, constitutional factors and allergic tendencies must be appraised. Careful clinical judgment is required of the physician to evaluate those individual factors in his particular patient which may influence drug action. In general, the high metabolic rate of infants diminishes quickly to rise gradually to adolescence and to maintain a plateau until the fourth or fifth decade, when there is gradual decline. The estimation of metabolic status is a difficult clinical problem, but it is significant in connection with the activity of many different types of drugs. Some drugs, such as morphine, do not follow ordinary rules regarding age effects. Infants and old persons in general are more sensitive to morphine than persons in the prime of life. It is particularly important to appraise the autonomic nervous balance. Some persons may be peculiarly sensitive to sympathetic drugs, while others may show a higher sensitivity with respect to drugs acting on the parasympathetic system. Most important is the proposition of appraising allergic tendencies in a patient. This should always be investigated in order to avoid, if possible, allergic or other untoward reactions to drugs which may produce such undesired effects.

DOSE-EFFECT RELATIONSHIPS

Physicians must remember that different persons will respond differently to the same dose of the same drug.[11] This factor of individual variation in response to drugs can roughly be represented by "distribution curves" in which increasing intensity of reaction to the same dose is indicated along the horizontal axis, while the vertical axis shows the number of persons grouped with regard to the same intensity of reaction. In general there will be some persons who will show a relatively small response. The great majority will show the "average effect." A small number of persons may show a particularly intense reaction from a dose that might produce no effect in the less sensitive person.

When results are accumulated with reference to all or no effect (as cure or death), the curve is sigmoid and shows the percentage of persons reacting, when arranged on the vertical axis, to increasing dosage on the horizontal axis. Such curves are particularly important in the quantitative estimation of toxicity and effectiveness.

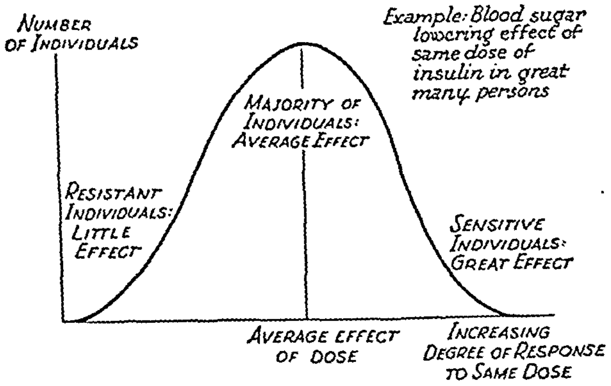

Fig. 1.—Relation of the number of reacting persons to graded response to the same dose of a drug (example: lowering effect of the same dose of insulin on the blood sugar in many persons).

Because of its ease of estimation under experimental conditions, the 50 per cent point on the curve is usually taken as the standard of reference. Thus, ED_{50} refers to the 50 per cent effective dose, that is, the dosage which will be effective, in the intensity desired, on 50 per cent of the organisms to which the drug is administered. In the same way LD_{50} refers to the dosage at which 50 per cent of the organisms to which the drug is administered may be expected to die. The ratio between the ED_{50} and the LD_{50} of a drug under standardized experimental conditions is sometimes referred to as the "safety index."

In applying this scientific knowledge, however, it is essential for the physician to remember that he is not interested in the dosage which will produce the desired effect in only 50 per cent of his patients, and he is certainly not interested in the dosage which may kill 50 per cent of his patients. The point is that the effective dose range of a drug may overlap the lethal range or the range of toxic reaction. This is the case, for example, with such drugs as emetine hydrochloride. Since the mechanisms of desired action and of death

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9. Stekol, J. A:: Detoxication Mechanisms, in Luck, J. M.: Annual Review of Biochemistry, Stanford University, Calif., Annual Reviews, Inc., 1941, vol. 10, pp. 265-284. Handler, P., and Perlziveig, W. A.: Detoxication Mechanism, ibid., 1945, vol. 14, pp. 617-642. Williams, R. T.: Detoxication Mechanisms: The Metabolism of Drugs and Allied Organic Compounds, New York, John Wiley & Sons, Inc., 1948.

10. Landsteiner, K.: The Specificity of Serological Reactions, Springfield, Ill., Charles C Thomas, Publisher, 1936.

11. Clark, A. J.: Individual Variation in the Response to Drugs, Tr. Med.-Chir. Soc. Edinburgh 42: 1-16, 1935; in Edinburgh M. J., (January) 1935.

may be different, the "slopes" of the curves may differ and overlap may readily occur. It is practically important for physicians to require pharmaceutic manufacturing houses to give precise information on the ED_{99} with relation to the LD_1, that is the ratio between the dosage which might be expected to produce the desired effect in practically all patients, to the dosage that might produce an untoward reaction in the most sensitive patient.[12]

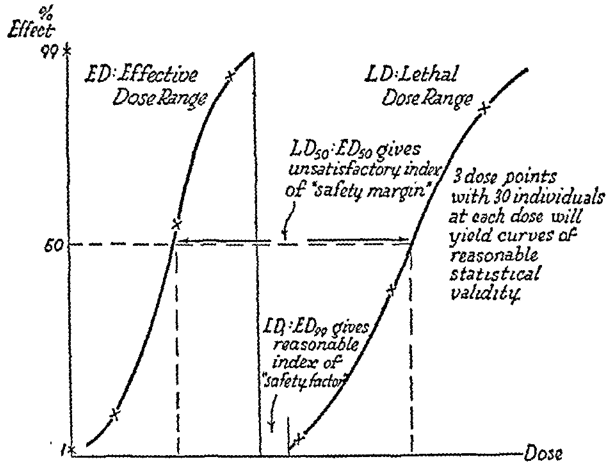

Fig. 2.—Relation of dose to percentage effect.

TIME-CONCENTRATION RELATIONSHIPS

Time is an unavoidable factor in the biologic response to drugs. For certain drugs, such as the inhalation anesthetics, the effective concentration for anesthesia, if maintained long enough, might produce untoward or even lethal effects. Accordingly, it is necessary to have data expressed in time-concentration curves. This may assist materially in estimating absorption and excretion gradients in relation to time and concentration for many important types of drugs. One wishes, of course, to obtain a concentration which within a reasonable time will produce the desired effect, but which will not produce undesired effects even if maintained for a relatively long period of time.

The concentration of a chemical in any particular living tissue at any given moment after administration is calculated from the product of dosage (mass of chemical per mass of living material) and the ratio of the rate of absorption into the tissue to the rate of its removal from it. There is a direct relation between concentration and intensity of effect.

MECHANISMS OF DRUG ACTION

While the dose-effect relationship with regard to drugs was anciently implied as a scientific problem for pharmacology, the question of the mechanism by which drugs act was not raised in a scientific manner until the nineteenth century. Greek, Roman and medieval physicians developed elaborate theories of drug action with reference to the balance of "humors." Crude and easily observable physical properties of drugs, together with easily recognizable effects, were "fitted" into the humoral theory as well as possible. Drugs were assessed from the standpoint of their cooling, heating, astringent, caustic, purgative or other properties and used generally in an effort to obtain an idealized balance of humors. A powerful reaction against the severe abuse of drug therapy during the eighteenth century resulted in the effort under C. F. S. Hahnemann (1755-1843) to develop "homeopathy," in which ridiculously small doses of drugs were recommended. This attempt did, however, remind physicians effectively of the healing power of nature and indirectly assisted in a more systematic study of the mechanism of drug action.

With the development of modern chemistry, following the pioneering quantitative studies of A. L. Lavoisier (1743-1794), and the isolation and identification of the active principles of crude drug in crystalline pure form, it was possible for the first time to begin a quantitative study of drug action, with particular reference to mechanism. Francois Magendie (1783-1855) first undertook the study of the localization of the site of action of drugs. In this he was assisted by his remarkable English pupil James Blake (1815-1893). A study developed of factors determining the concentration of drugs in particular tissues, as a result of a survey of factors concerned in absorption and in destruction or excretion. Oswald Schmiedeberg (1838-1921) inaugurated systematic studies on the fate of drugs in the body when he found that chloral is reduced to trichloroethanol and conjugated with glycuronic acid to be excreted in the urine. The action of drugs was studied with reference to the point of application, not only with regard to precipitation of protein, but also with respect to possible reflex nerve responses. Studies were later made on the effects of drugs in transport through the body. This led to the first satisfactory scientific explanation of drug action, in the work of Claude Bernard (1813-1878) on the action of carbon monoxide in displacing oxygen from hemoglobin and thus producing all the effects of oxygen want.[13]

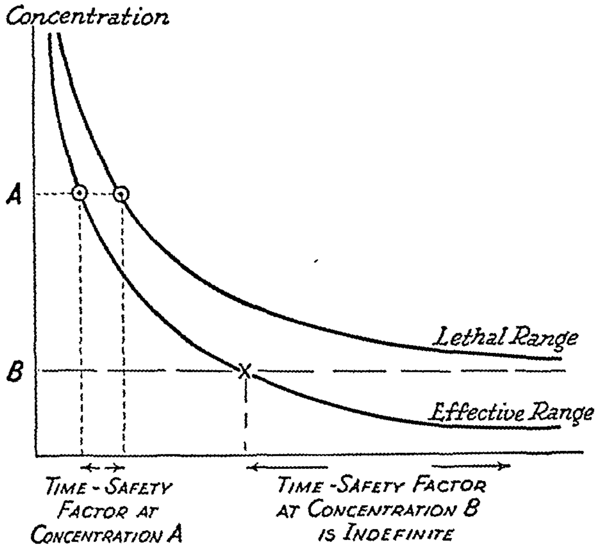

Fig. 3.—Time-concentration relations (example: inhalation anesthetics).

Following Blake's demonstration of chemical relationships in drug action, with reference to inorganic salts, A. C. Brown (1838-1922) and T. R. Fraser (1841-1919), in showing the curare-like effect of quaternary ammonium derivatives of various alkaloids,[14] emphasized an extreme physicochemical position in the mechanism of drug action. They postulated that the action of a drug is entirely a function of the chemical structure and energy relations of its molecule. This approach has been brilliantly developed with the introduction of many new useful drugs by a host of chemists, such as the German researchers stimulated by Willstatter, Ehrlich, Emil Fischer and Wieland, the French group influenced by Fourneau and Levaditi, the Swiss workers as Karrer, Meier, Ruzicka and Stoll, the English investigators as Cook and Robinson and such Americans as Adams, Alles, Fieser, Jacobs, Kamm, Major, Shonle, Small and SubbaRow. Unfortunately, physicians have little contact with such important scientific leaders in the development of drugs. It might help to ask them to discuss their work at medical meetings.

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[12] Foster, R. H. K.: Standardization of Safety Margin, J. Pharmacol. & Exper. Therap. **65**: 1-17, 1939.

[13] Bernard, C.: Leçons sur les anesthésiques et sur l'asphyxie, Paris, J.-B. Baillière, 1875.

[14] Brown, A. C., and Fraser, T. R.: On the Connection Between Chemical Constitution and Physiological Action, Tr. Roy. Soc. Edinburgh **25**: 151-203, 1868-1869.

The chemical approach to the mechanism of drug action was modified slightly in the well known study of H. H. Meyer (1853-1939) and C. E. Overton on lipid solubility of narcotics.[15] In the famous side chain theory[16] of Paul Ehrlich (1854-1915) there was greater appreciation of the significance in drug action of physiologic factors involving the living material. Many modifications of Ehrlich's views are current. They have been thoroughly surveyed by Clark.[1] Extensions of Ehrlich's theories by Pauling are particularly interesting in relation to antibody formation.[17]

The leading contributors to modern pharmacologic theory are the English. General impetus has come from Sir Henry Dale and A. V. Hill. Stabilization of drug standards and of criteria for quantitative study of drug action has resulted from the fundamental work of Trevan, Gaddum, Clark and Burn. The mechanisms of drug action are being investigated by Haddow, Hawking, Ing, McIlwain, Peters, Quastel, Rideal and Yorke.[18] The English symposiums and reviews on current pharmacology are the most satisfactory of any available and deserve extended study.

Recent studies on the mechanism of drug action have been directed toward the basic units concerned, which are molecules of drugs in relation to living cells. This has been well explored by A. J. Clark (1885-1941) and his English followers.[1] Clark called particular attention to the relatively small size of the molecules of a drug in comparison to the relatively large size of the cells on which they act. He pointed out that the large number of molecules of a drug, even in a small mass, would compensate for the difference in size. However, in many instances, as with cholinergic or adrenergic compounds, the number of molecules capable of producing an effect can be explained only on the basis of chemical reaction with a small active patch on the surface of the cell.

Drug action is at a molecular level and involves relations between molecules of drug and molecules of cell receptors. Thus, investigation of the molecular architecture of cells, including the organization of the various cell interfaces, becomes prerequisite to further clarification of the mechanism of drug action. Such study reveals the significance of short range (van der Waals) association forces in drug-receptor relationships. The chief chemical factors involved are hydrocarbon, polar and ionic groups, with spacing and stereochemical factors determining the resulting forces of association. These forces vary in geometric proportion to the distances between relevant groups, suggesting the sensitiveness of the association forces to the orientation of the molecules concerned. Slight changes in spacing, dipole charge or ionization may form or split an association complex, thus accounting for high specificity and rapid enzyme reversibility. Competition between related chemicals in regard to receptor complexes in cell interfaces or other molecularly organized cellular structures results in effects determined by mass law equilibriums. The approach to pharmacologic problems through a study of molecular architecture of cells and receptor complexes permits an attempt to apply quantum theory to pharmacologic mechanisms, which has already shown to be so promising in connection with various mutafacient agents.[19]

Most of the current theories regarding the mechanism of drug action involve surface phenomena. These concern surface tension, polarity, template effects, blocking effects, "active patches" and a competitive effect involving essential metabolites in complicated enzyme systems.

In order to understand current theories of the mechanism of drug action, it is essential to know something about the surface organization of cells. According to the admirable summary by Davson and Danielli,[20] the cell surface is composed of a double layer of oriented lipid molecules, with single flattened molecules of protein spread on the outside and inside. These protein molecules may have reactive chemical groupings exposed to the surface, to which various compounds in the intercellular fluid, including drugs, may attach. On the other hand, certain ions may pass between the protein molecules and get into the lipid layer and eventually into the inside of the cell. Other compounds in the intercellular fluid may disrupt the proteins on the surface, dissolve the fats in the lipid layer and thus profoundly alter the surface tension with resulting injury or rupture of the cell. Certain molecules attaching to the surface of the cell may block other essential molecules from reacting with the cell in ordinary metabolism, thus altering the activity of the cell. It is now known that many chemicals, such as the sulfonamide drugs, act by interfering with essential metabolites, particularly vitamins, through competition involving similarity of chemical structure.[21] It is also now well established that many drugs, such as organometallic chemotherapeutic agents, act by disturbance of enzyme systems either on the surface of cells or inside cells.

An important point for physicians always to remember with respect to drug action is that drugs can only make cells do more or less what they are already capable of doing. No drug, for example, can make a muscle cell secrete urine. No drug can restore the functional activity of a cell so damaged as to be incapable of that function.

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[15] Overton, C. E.: Studien über die Narkose, zugleich ein Beitrag zur allgemeinen Pharmakologie Jena, G. Fischer, 1901.

[16] Ehrlich, P.: Das Sauerstoff-Bedürfniss des Organisms: Eine farbenanalytische Studie, Berlin, Hirschwald. 1885.

[17] Pauling, L.: Antibodies and Specific Biological Forces, Endeavor **7**: 43-53, 1948.

[18] Modes of Drug Action, Tr. Faraday Soc. **39**: 319-444, 1943.

[19] [illegible] it Is Life? The Physical Aspect of the Living Cel [illegible] niversity Press, 1945. Haddow, A.; Boyland, E., [illegible] on Chem [illegible] Brit. M. Bull. **4**: [illegible] l, E.: [illegible] and Cancer Chemotherapy, Yale J. Biol. & Med **20**: [illegible]

[20] Davson, H., and Danielli, J. F.: The Permeability of Natural Membranes, Cambridge, Mass., Harvard University Press, 1943.

[21] Woods, D. O.: Relation of p-Aminobenzoic Acid to the Mechanism of Action of Sulphanilamide, Brit. J. Exper. Path. **21**: 74-90, 1940. McIlwain, H.: Interpretation of Chemotherapy Through Nutritional Studies, Lancet **1**: 412-415 (April 4) 1942. DuBos, R. J.: The Bacterial Cell in Its Relation to Problems of Virulence, Immunity and Chemotherapy, Cambridge, Mass., Harvard University Press, 1945.

BIOCHEMORPHOLOGY: THE RELATION BETWEEN CHEMICAL CONSTITUTION AND BIOLOGIC ACTION

It is becoming increasingly important in a practical way for physicians to understand something about the relationship between chemical constitution and biologic action of drugs. This fascinating subject was first investigated by that remarkable gold rush physician, James Blake (1815-1893), who came to the United States after a short brilliant scientific career in London. About a hundred years ago he settled in St. Louis, joining later the gold rush to California. After a remarkable clinical and scientific career in California, which included meteorology, archeology, geology and zoology, he returned to his earlier scientific investigations on the relationship between chemical constitution and biologic action, with particular reference to inorganic salts. Anticipating Meyer and Mendeljeff by many years, Blake classified the elements into groups on the basis of the biologic action of their salts.[22] These groups, of course, correspond to what we now call the "periodic table."

Journal Publications of the Council on Pharmacy and Chemistry, January-May 1948

Date	Subject	Remarks
Jan. 3	Organomercurials	Appraisal of "mercurochrome," "metaphen" and "merthiolate"
Jan. 24	Human serum albumin in nephrosis	Also notes on names of new drugs
Jan. 31	Acceptances for N.N.R.	Routine for approved preparations
Feb. 7	Statement on drug advertising	Suggests support for Council policies
Feb. 14	Names and acceptances for N.N.R.	
March 6	Annual meeting; protein and amino acid preparations	Also discussion of protein hydrolysates
March 20	Oxidized cellulose	Monograph for N.N.R.
March 27	Penicillin in treatment of syphilis	Report of Syphilis Study Section, National Institute of Health
April 3	Acceptances for N.N.R.	
April 10	Acceptances for N.N.R.	
April 17	Chloroquine diphosphate	Monograph for N.N.R.
April 24	Isobornyl thiocyanoacetate	Monograph for N.N.R.
May 24	Metopon HCl; folic acid; BAL in oil	Review and monographs for N.N.R.
May 29	Alcohol-dextrose and dextrose-vitamin solutions for intravenous infusion	Not acceptable for N.N.R.

It is interesting to learn what similarity of depressant action exists between the various members of the aliphatic organic compounds. Similarly, a common pharmacologic property of most alkaloids is rapidity of absorption and distribution and rapidity of destruction or excretion. On the other hand, all steroids, including vitamin D, sex hormones, digitalis and carcinogenic agents, are slow in action, with slow absorption and destruction, but the action lasts for a long time even from small dosage.

As we learn more about energy distribution and potentiality, we will be able more satisfactorily to predict possible biologic action of new chemical compounds. Indeed, some advance in this respect has already been made.

CLASSIFICATION OF DRUGS

The most satisfactory classification of drugs for the practical work of the physician is on the basis of the chief use of the drug. There are four major divisions into which drugs may be grouped on this basis: first, those drugs used chiefly for diagnosis, such as the halogenated phenolphthaleins; second, those drugs used chiefly for the prevention of disease, such as the vitamins and the antiseptics; third, those drugs used chiefly for "cure," such as quinine in malaria, and fourth, those drugs used chiefly for the alleviation of the symptoms of disease.

By far the greatest number of drugs used in medicine are employed for the alleviation of the symptoms of disease. These may be subdivided into the systems of the body on which the chief effect may be expected. Thus, one could treat of the drugs which act chiefly on the central nervous system, either as depressants or stimulants, those which affect the autonomic nervous system and its various divisions in either a stimulating or depressing way, those which act mainly on the heart and circulation, those which are used especially for effects on respiration, those which are employed usually in connection with the gastroenteric tract, those which generally produce effects on the excretory system, those which alter the endocrine system and those given chiefly for local effects on the skin.

It is important to remember that chemicals used for diagnostic purposes may have significant toxicity and thus deserve full consideration as drugs. Similarly, it is wise to recall that some of the vitamins used for the prevention of disease may under certain conditions have undesired effects and should also be considered from the standpoint of their general pharmacology. Drugs that are used for curative purposes are chiefly involved in the general field called "chemotherapy."

COMMENT

In a survey of this character, it is impossible to do more than suggest the many and various new types of chemicals which are finding significant practical application as a result of pharmacologic investigation. To discuss merely the new antihistaminic drugs, for example, would take many pages. Physicians will be wise to wait until reports are made on new drugs by the Council on Pharmacy and Chemistry of the American Medical Association. These reports are published, as appropriate, in The Journal. The wide variety and practical importance of these reports are indicated in the accompanying table, which lists those published in the first third of this year.

SUMMARY

When new drugs are acceptable for general clinical use, they are ordinarily described in detail in "New and Nonofficial Remedies." Physicians are cautioned to be sceptical of the descriptions of new drugs offered by pharmaceutic manufacturers in overly elegant brochures or other publications. It is safer and cheaper for the patient for physicians to restrict themselves to such drugs as are described in the "Pharmacopoeia of the United States," "The National Formulary" and "New and Nonofficial Remedies."

A matter of prime importance in the use of drugs, as in any technical procedure in medicine, is to weigh the hazards of the drug against the hazards of the disease. Only in a critical or most urgent condition is the physician justified in taking a risk for his patient through the use of a drug which may have untoward or dangerous effects. The physician should, of course, know thoroughly in advance what symptoms may appear as a result of toxic action and be prepared to counteract them promptly.

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[22] Blake, J.: On the Influence of Isomorphism in Determining the Reactions That Take Place Between Inorganic Compounds and the Elements of Living Things, Am. J. M. Sc. 55: 63-76, 1848.

This discussion reviews in general terms some of the basic pharmacologic principles which may be useful in clinical practice. It emphasizes the value of acquaintance with such important concepts as drug standardization, factors determining the intensity of drug action, dose-effect and time-concentration relations and mechanisms of drug action. Suggestions are made as to what information about drugs is practically helpful for physicians to know. It rather hesitatingly indicates how much more efficient and economical physicians might be in the use of drugs if they would put more time to the study of fundamental principles in pharmacology and to the reports of the Council of Pharmacy and Chemistry of the American Medical Association and if they would restrict the drugs they use to those admitted to "New and Nonofficial Remedies" and the "Pharmacopoeia of the United States."

DERMATITIS RESULTING FROM CONTACT WITH MOTHS (GENUS HYLESIA)

Report of Cases

WILLIAM R. HILL, M.D.
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and
JOSEPH KOVACS Jr., M.D.
Boston

Dermatitis as a result of contact with the brown tail moth (Euproctis chrysorrhea Linn) was first observed in the United States by White[1] in 1901. The rash was noted a few minutes to several hours after exposure to the cocoon, caterpillar or adult moth and either remained localized at the site of contact or became generalized. The most frequently occurring lesion[2] was a discrete erythematous maculopapule occurring singly or in groups, which in the cases of severe disease coalesced to form urticarial wheals. Steele and Sawyer[3] described wheals with vesicular or shallow necrotic centers. Pruritus was a constant complaint and was described as mild to intense; constitutional symptoms were not noted. The duration of the eruption varied from five to seven days, although in rare instances several weeks elapsed before resolution.

While it was recognized early that the dermatitis was provoked by the nettling hairs functioning as foreign bodies, it remained for Tyzzer[4] to demonstrate that a chemical substance present within the hair was capable of acting as a cutaneous sensitizer. This latter property could be destroyed by heat or alkali without altering the hair structure.

Dermatitis resulting from contact with other species of moths (genus Hylesia) has been reported in South America by Léger and Mouzels,[5] but so far as can be determined an eruption due to this genus has not been observed in the United States, where the genus does not occur.

It is the purpose of this paper to call attention to an eruption observed in 31 persons, members of the crew of an oil tanker, the *Wolfcreek,* who had been exposed to moths (genus Hylesia) in Cari Pito, Venezuela, and later on board the vessel during and immediately following its return voyage to Boston.

All but 2 of these patients were examined at the United States Marine Hospital, Brighton, Mass., on Feb. 23, 1947, at which time 4 patients, whose histories are reported in detail, were admitted to the hospital, remaining there for five days. Two types of cutaneous lesions were observed, one a localized form of grouped erythematous papules and papulovesicles, on the arms, legs or back, and the other a generalized urticarial variety suggesting morbilliform toxicoderma, most apparent on the flexor surface of the forearms, anterior aspect of the chest, abdomen and thighs (fig. 1, case 3).

For the most part the face, palms, soles and mucous membranes were devoid of lesions. In the majority of the patients the lesions appeared at intervals varying from a few minutes to several hours after initial contact, with an acute course and disappearance in four to seven days.

REPORT OF CASES

Case 1.—G. W., a 20 year old American merchant seaman, was admitted to the United States Marine Hospital, Brighton, Mass., on Feb. 23, 1947, with the complaint of a pruritic rash on the trunk, neck and extremities. He stated that on the night of February 15, a few hours after dropping anchor at Cari Pito, Venezuela, a swarm of moths invaded the ship. He and several other members of the crew killed a number of these by crushing them between their fingers, and later they exploded a dichlorodiphenyltrichloroethane (DDT) bomb in an attempt to destroy them. Shortly thereafter the patient noted several "small white itching bumps" on the uncovered skin of the abdomen at the belt line. The following morning the eruption had spread over the entire body with the exception of the face, palms and soles. He applied calamine lotion to the cutaneous lesions, which decreased the pruritus and resulted in a gradual subsidence of the dermatitis. The vessel remained in Venezuela for forty-eight hours to take on cargo, during which time he did not go ashore. On February 22 there was a recurrence of the generalized dermatitis.

Physical examination on February 23 revealed a well developed man whose only complaint was intense pruritus and who presented a diffuse urticarial eruption on the trunk, flexor surface of the forearms and lower part of the legs, anterior aspect of the thighs and neck. The individual lesions varied from 2 to 5 mm. in diameter, but here and there they had coalesced to form larger irregular wheals, some of which were palm sized. Many of the smaller lesions were surmounted by intact translucent vesicles or had excoriated surfaces. Pinhead-sized purpuric macules were scattered irregularly throughout the erythematous papules and were especially noticeable on the dorsal surface of the penis and on the lower part of the abdomen. The skin of the face, scalp, palms and soles was normal; the mucous membranes were unaffected. The remainder of the physical examination revealed no abnormalities.

During the hospital stay the temperature remained normal, and the rash subsided gradually without treatment. On discharge five days after admission the skin was entirely free of eruption.

The white cell count on admission was 6,350, with 67 per cent neutrophils, 22 per cent lymphocytes, 4 per cent monocytes and 7 per cent eosinophils. The hemoglobin (Westgren) was 14 Gm. The results of the urinalysis were normal, and serologic tests for syphilis elicited negative reactions.

Case 2.—W. S., a 26 year old American merchant seaman, was examined on Feb. 23, 1947, at the United States Marine Hospital, Brighton, because of dermatitis of the trunk, extremi-

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From the United States Marine Hospital, Brighton, Mass.

Assistant in Medicine and Assistant in Dermatology, Harvard Medical School and Massachusetts General Hospital (Dr. Hill), Instructor, Department of Epidemiology, Harvard School of Public Health, and Director, Division of Hospital Survey and Construction, Massachusetts Department of Public Health (Dr. Rubenstein), and Senior Assistant Surgeon, United Public Health Service (Dr. Kovacs).

[1] White, J. C.: Dermatitis Produced by a Caterpillar, Boston M. & S. J. **144:** 599, 1901.

[2] Potter, A.: Brown Tail Moth Dermatitis, J. A. M. A. **53:** 1463-1464 (Oct. 30) 1909.

[3] Steele, C. W., and Sawyer, W. H., Jr.: The Brown Tail Moth, J. Maine M. A. **35:** 157, 1944.

[4] Tyzzer, E. E.: The Pathology of the Brown Tail Moth Dermatitis, J. M. Research **11:** 43, 1907.

[5] Léger, M., and Mouzels, P.: Dermatose prurigineuse déterminée par des papillons Saturindes du genre Hylesia, Bull. Soc. de path. exot. **11:** 404, 1918.

ties, neck and ears. He, together with the patient in case 1, had swatted moths which entered the vessel on the night of February 15 and was present when a DDT bomb was exploded. Shortly thereafter he noted "itchy bumps" on the volar aspect of his wrists. By the following day the pruritus had subsided, but two days later the eruption had spread to involve the remainder of the skin, with the exception of the face, palms and soles. The patient stated that he had not been ashore in Venezuela and that the only native food he had eaten was bananas. He recalled an eruption which had occurred a few hours after handling DDT some months prior to the present eruption.

On admission the patient was observed to have an eruption similar to that described in case 1. The white cell count was 6,600, with 45 per cent neutrophils, 38 per cent lymphocytes, 6 per cent monocytes and 11 per cent eosinophils. The hemoglobin (Westgren) was 14.4 Gm. The urine contained 2 to 3 red cells per high power field, but this could probably be explained by the fact that the patient had a renal condition in 1945 requiring surgical intervention. The serologic reaction for syphilis was negative. During the hospital stay, a patch test was performed with a piece of sheet which had been used on the patient's bed on board ship, and no reaction was noted at the site forty-eight hours later. The eruption faded without treatment in two days, and he was symptom free on discharge at the end of five days.

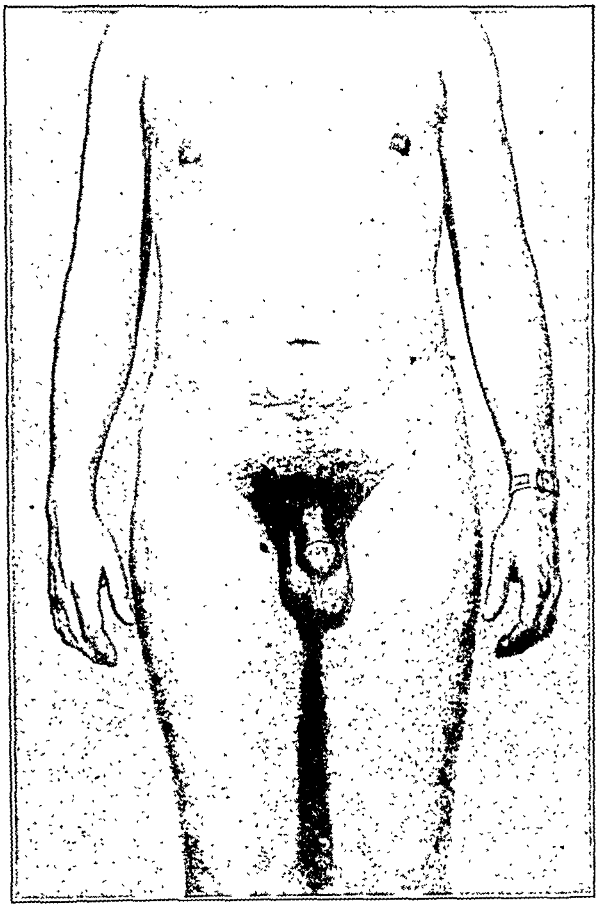

Fig. 1 (case 3).—Dermatitis due to moths of the genus Hylesia. Erythematopapular eruption on the trunk and extremities with scattered vesicles on the forearms. The large lesion on the anterior aspect of the right thigh is at the site of a patch test with hairs of the moth, which produced a positive reaction.

Case 3.—J. K., a 22 year old merchant seaman, had noted insect bites on his right upper lid on Feb. 16, 1947, the day of departure from Venezuela. However, it was not until arising on the morning of February 22 that he first noted the presence of itchy "small white bumps" on his chest and the flexor surface of his wrists. Twenty-four hours later the rash had spread to involve most of the body. With the exception of intense pruritus, there were no constitutional symptoms.

Examination on admission to the hospital revealed a diffuse erythematopapular hemorrhagic eruption of the trunk and extremities, together with edema of the eyelids. On the anterior surface of the forearms a few scattered vesicles were also seen (fig. 1).

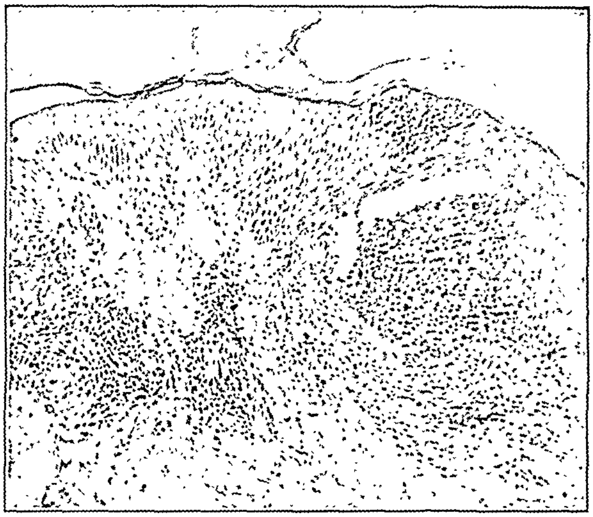

Fig. 2.—Dermatitis due to moths of the genus Hylesia. Photomicrograph (× 100) showing an intraepidermal vesicle and the acute nonspecific infiltrate in the upper part of the cutis.

The white cell count on admission was 5,250, with 57 per cent neutrophils, 32 per cent lymphocytes, 8 per cent monocytes and 3 per cent eosinophils. Urinalysis showed 2 to 4 white cells per high power field. Serologic tests for syphilis elicited negative reactions. Patch tests were performed with a piece of a new unused sheet, with a piece of sheet discolored by the moth and with hairs of the moth. The reaction to the test with the clean sheet was negative, but itching was noticeable within one-half hour of application and a violent papulovesicular eruption appeared at the test site twenty-four hours after the discolored sheet and the hair of the moth had been applied.*

Specimens for biopsy were removed from an urticarial papule on the forearm and from the skin at the site of the patch test with the moth hairs (fig. 2). The former of these sections of skin revealed diffuse vascular dilatation throughout the upper part of the cutis, together with a moderate perivascular infiltrate consisting of polymorphonuclear leukocytes. The collagen fibers in the upper part of the cutis were edematous and paler staining than those in the deeper layers. The epidermis was thickened, because of ballooning of the prickle cells. Polymorphonuclear leukocytes had invaded the epidermis from below and were seen in scattered foci in the intracellular spaces.

In the section of skin removed from the site of the patch test, forty-eight hours after the moth hairs were applied, a similar microscopic picture was observed, although in general the pathologic reaction was much more intense (fig. 2). The cellular infiltrate in the papillary layer of the cutis was denser and also more toxic, as evidenced by fragmentation of polymorphonuclear leukocytes. A profuse migration of these cells, small lymphocytes and eosinophils had taken place in the epidermis and had resulted in the formation of distinct intraepidermal vesicles. Spicules of moth hair were not observed, nor was a foreign body reaction noted in the cutis.

Case 4.—H. T., a 35 year old merchant seaman, was well until the day before admission, Feb. 22, 1947, when he first noted "bumps" on the back, which spread within a few hours to the arms, legs and abdomen. Except for pruritus, there were no complaints. On examination, the patient presented lesions similar to those of the aforementioned patients, except that those on the back had coalesced to form plaques 1 to 2 cm. in diameter. The white cell count on admission was 6,000, with 59 per cent neutrophils, 34 per cent lymphocytes, 4 per cent monocytes and 3 per cent eosinophils. Results of the urinalysis were normal, and serologic tests for syphilis elicited negative reactions. Ten minims of a 1:1,000 solution of epinephrine hydrochloride was administered subcutaneously every four hours for one day, without improvement. On discharge, five days after admission, however, the lesions had entirely disappeared.

EPIDEMIOLOGY

The distribution of cases according to the date of onset is shown in figure 3. Twenty-nine of the 31 persons included in the survey were examined at the United States Marine Hospital in Brighton; the others, both members of the original crew, were examined during an inspection tour of the vessel by one of us (A.D.R.). Not included are several cases in which the eruption developed in new crew members who boarded the ship while in Boston and recurrences which were noted among several of the original patients after they had returned to the ship.

The occurrence of 9 cases of dermatitis on Feb. 22, 1947, acquired epidemiologic significance when it was learned that all these patients had noted the eruption on arising in the morning, the bed linen having been changed on the evening before. Large brown stains were found on the sheets of several patients. The eruption had also been first noted in the morning among those in whom the cutaneous rash had developed on February 20 and 21. In these cases, also, the bed linen had been changed the evening before.

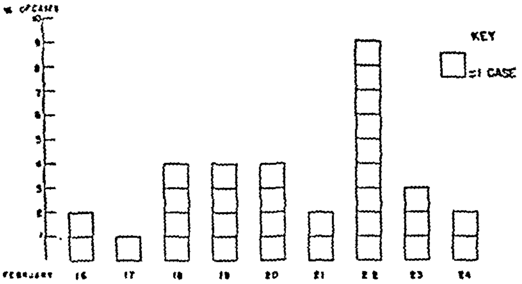

Fig. 3.—Dermatitis due to moths of the genus Hylesia. Chart of cases by day of onset.

Inspection of the closet where fresh sheets and other linens were stored showed a direct connection with the exterior by means of a wide-meshed metal barrier, sufficient to permit the entrance of moths. The bodies of several moths were found on the closet floor, and others had been suffocated between the stacked sheets.

Patch tests were performed on 1 patient (case 3) and on 2 volunteers who had not previously been exposed to the moth, both with the stained sheets and with hairs from the moth. The type of reaction (fig. 1) when the test was performed using the hair of the moth was similar in each instance to the lesions seen in the majority of patients and pursued a similar clinical course.

CLASSIFICATION AND CHARACTERISTICS OF THE MOTH

Several dead moths found on the ship were referred to the Museum of Comparative Zoology, Harvard University, Cambridge, Mass., for identification.

Mr. V. Nabokov, lepidopterist, identified the moths as females of the genus Hylesia; the species is nearest to Hylesia tapabex Dyar, but, owing to the defective condition of the specimens, the specific identification could not be established with certainty. These moths belong to the family Saturniidae, sometimes called, in English, peacock or silk moths. It consists of numerous species, around one hundred and ten having been described, but the group is so difficult to differentiate and so little known that probably some of the forms described as species are only races of one species. All of these moths are small and gray, with weakly falcated forewings and long coarse hair on the abdomen.

The species of Hylesia inhabit tropical regions of America. Several of them are known to cause dermatitis by the hairs which cover the abdomen. They are found on tree trunks, walls or fences in the daytime. Most of the known larvae are gregarious and undertake processional journeys in search of food. The female moths usually appear in large numbers at certain seasons and then migrate in swarms. They come freely to light, and this may explain their occurrence on shipboard, the vessels being provided with powerful lights.

COMMENT

The majority of patients, whose eruption developed during the return voyage to Boston and while in the port, stated that the initial lesions appeared on the flexor surface of the forearms, anterior aspect of the chest or thighs; in a few the neck or upper part of the back was the initial site. The incubation period ranged from a few minutes (cases 1 and 2) after exposure to several hours, as judged by the statement of patients who had retired in the evening in good health and who had noted an eruption on arising.

The initial lesion appeared to be an erythematous maculopapule or wheal, which in the cases of severe eruption became purpuric or vesicular. In a few instances the rash remained localized to the initial contact site, but in the majority a generalized eruption appeared within twenty-four to forty-eight hours, usually sparing the face, palms, soles and mucous membranes. Whether the generalized eruption indicated individual sensitivity, prolonged exposure to hair of the moth or a large amount of the inoculum could not be determined. Positive reactions to patch tests observed in 1 patient (case 3) and 2 volunteers who had not previously been exposed to the moths suggest that the hair of the moth acts as a primary irritant to which most persons are susceptible.

In all patients, the dermatitis was of short duration and lasted for four to seven days. Unfortunately, further follow-up was curtailed by the early departure of the vessel. It is interesting that the ship was held in quarantine because of the possibility that members of the crew were infected with a contagious disease. The history of contact with moths and the peculiar distribution of cases as to the time of onset were of considerable value in establishing the diagnosis and in removal of the quarantine.

Dermatitis observed in 31 persons in this series was produced by contact with the urticating abdominal hairs of female moths of the genus Hylesia, as shown by positive reactions to patch tests with the hair. The eruption may follow contact with living or dead moths, and the hairs may retain their irritating property over long periods of time, as evidenced by the appearance of the dermatitis eight or more days after the initial invasion. Indirect contact may occur when the urticating hairs are caught in articles of clothing, towels or sheets. Moth dermatitis should therefore be considered in the differential diagnoses of urticarial eruptions, especially in members of crews of ships or airplanes when ports of call include South American countries.

Removal of the patient from the source of contact, a soap and water bath, a change to clean clothing and application of an alkaline wash resulted in symptomatic relief within twenty-four hours. Diphenhydramine hydrochloride ("benadryl hydrochloride") and tripelennamine hydrochloride ("pyribenzamine hydrochloride") were administered to 16 patients orally in a dosage of 150 mg. daily for several days, without influencing the pruritus or the course of the eruption. Symptomatic relief was not obtained when 10 minims of a 1 : 1,000 dilution of epinephrine hydrochloride was administered subcutaneously every four hours for one day. Desensitization with extract material of the moth, as advocated by Steele and Sawyer,[3] who employed this method in a case of dermatitis due to contact with the brown tail moth, was not carried out in this series of cases.

SUMMARY

An outbreak of dermatitis resulting from contact with moths (genus Hylesia) is described.

Of 45 members of the crew, an eruption developed in 31 as the result of direct contact with urticating hairs of the adult moth.

The eruption occurred not only as a result of exposure to moths, but after contact with moth-stained bed sheets.

The diagnosis was confirmed by positive reactions to patch tests with moth hairs.

520 Commonwealth Avenue.

CYSTS (PERINEURIAL) OF THE SACRAL ROOTS

Another Cause (Removable) of Sciatic Pain

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New York

This communication calls attention to a pathologic entity that I described in 1938[1] as a chance encounter at autopsy. Cysts of the posterior sacral nerve roots seem to constitute another cause of the sciatic syndrome, which may be dealt with satisfactorily at operation.

Among the manifold causes of sciatica, herniations of the intervertebral disks have emerged as an important entity recently as a result of pathologic studies made by Schmorl and Junghanns,[2] followed by the important clinical work of Mixter and Barr.[3] A group of cases of backache or sciatica or both exist for which an adequate explanation has not been apparent. Moreover, explorations with negative results for protruded intervertebral disks have been carried out in approximately 10 per cent of the patients who presented rather characteristic symptoms and signs of this condition, requiring operation. Such an incorrect diagnosis was made in the present case, in which the clinical picture was observed to have resulted from the presence of an extradural cyst of the second sacral posterior nerve root and ganglion, the pathologic condition previously described[1] (figs. 1, 2, 3, 4 and 5). Removal of the cyst at operation resulted in complete relief from incapacitating symptoms and prompt recession of clinical signs. Exposure of the cyst necessitated removal of the cephalad part of the posterior arch of the sacrum, a procedure not ordinarily carried out in the course of operations for herniated intervertebral disks. Failure to do this may account for some of the negative disclosures in the surgical treatment of sciatica.

In 1938 in the course of dissections of the filum terminale in approximately 30 adults, while at the Montreal Neurological Institute, I encountered 5 cases of perineurial cysts on the extradural portions of the posterior sacral or coccygeal nerve roots.[4] The clinical significance of this experience was not appreciated at that time, although I believed that the cysts might, in the course of time, prove to play a part in the causation of certain cases of sciatica. In view of the present clinical case, this suspicion appears to have been confirmed. It therefore seems imperative to keep this possibility in mind and to carry out the simple necessary steps to establish the presence of such cysts, or to exclude them, in those cases of sciatic pain requiring operation and in which herniation of the intervertebral disk, or any other satisfactory explanation for the clinical syndrome, is not found.

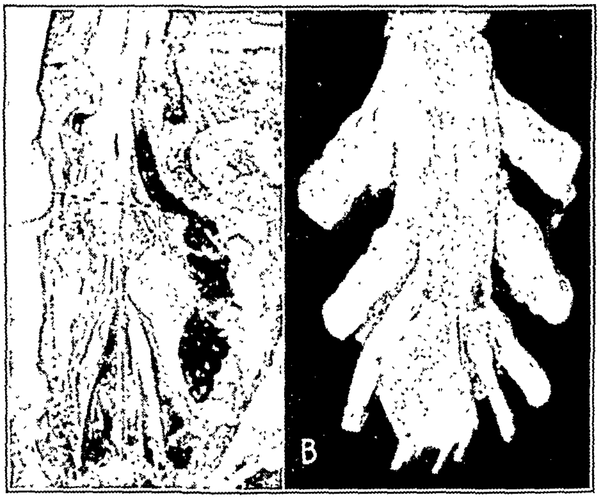

Fig. 1.—*A*, photograph taken at autopsy, showing a cyst (indicated by arrow) occurring on the second sacral nerve root. The cephalad margin of the posterior arch of the sacrum, which covered the cyst completely, is indicated by the broken line. *B*, photograph of a cyst arising from the third sacral nerve root and decidedly compressing the adjacent roots. The appearance of this cyst is essentially identical with that encountered at operation in the case reported. The specimens shown in this figure were obtained at autopsy at the Jewish Hospital of Brooklyn (by permission of Dr. David Grayzel, Department of Pathology).

REPORT OF A CASE

J. L., aged 42, was admitted to the Norwalk General Hospital, Aug. 29, 1947, because of severe pain in the region of her right hip and the posterior aspect of the right thigh, of eight months' duration, associated with a feeling of pressure, warmth and numbness extending from the hip posteriorly to the calf of the right leg during the latter month of her illness. The patient stated that she had been in good health, free from pain, until Christmas day 1946, when she tripped in her home striking her head, the lower part of the back and her hip against the

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From the Department of Surgery of the Norwalk General Hospital, Norwalk, Conn.

Read at the meeting of the Harvey Cushing Society at Hot Springs, Va., Nov. 15, 1947.

[1] Tarlov, I. M.: Perineurial Cysts of the Spinal Nerve Roots, Arch. Neurol. & Psychiat. **40:** 1067-1074 (Dec.) 1938.

[2] Schmorl, G., and Junghanns, H.: Die gesunde und kranke Wirbelsäule im Röntgenbild, Leipzig, Georg Thieme, 1932.

[3] Mixter, W. J., and Barr, J. S.: Rupture of the Intervertebral Disc with Involvement of the Spinal Canal, New England J. Med. **211:** 210-215, 1934.

[4] Tarlov.[1] This high incidence of cysts encountered at autopsy in my series seems to have been confirmed recently in Sweden by Rexed,[5] who found arachnoidal proliferations and cysts in "8 cases out of 17 examined"—the "material consisted of the lumbar spinal cord with its nerve roots and first stretch of the spinal nerves enclosed in the dural sac." Rexed's statement, ". . . a search through the current literature revealed no description of this condition," overlooks my prior account (1938) of such cysts, which, however, were not associated with arachnoidal proliferations.

[5] Rexed, B.: Arachnoidal Proliferations with Cyst Formation in Human Spinal Nerve Roots at Their Entry into the Intervertebral Foramina, J. Neurosurg. **4:** 414-421, 1947.

andirons and hearth of the fireplace. She sustained a bump on her head and a bruise on her right hip and lumbosacral area. She went to bed because of pain in the regions of the bruise, but remained there for only two hours, and after two days she was able to resume her household duties without discomfort. Ten days after the fall slight pain developed in the right hip. This persisted until the first of February, when the pain became much severer. There was difficulty in getting out of a chair or engaging in any task which required her to bend forward or laterally. The severity of the pain gradually increased, and the patient experienced increasing difficulty in getting out of bed or in assuming any household activity. Early in June the pain began to radiate down the posterior aspect of the right thigh. The pain was relieved to some extent by heat and recumbency, but its severity gradually increased until the first of August, since which time she had been obliged to remain in bed. During the latter month of her illness, on getting out of bed, she experienced a disagreeable sensation of pressure, warmth and numbness extending from the right hip posteriorly to the calf of the leg.

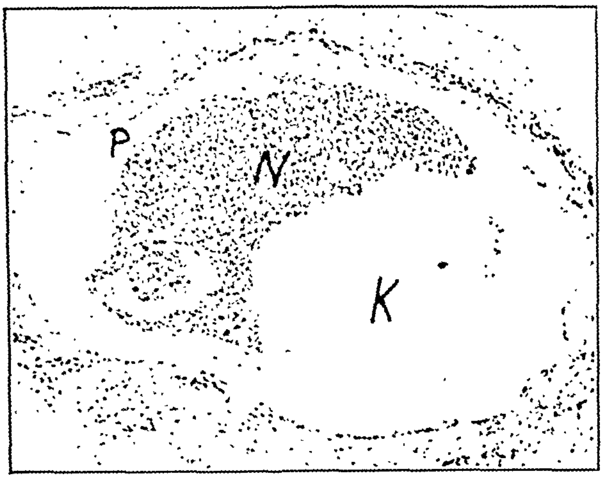

Fig. 2.—Microscopic appearance of a cyst discovered at autopsy and arising from the extradural portion of the posterior sacral nerve root. The cyst (K) may be seen occupying the perineurial space (P) and having excavated a portion of the posterior nerve root (N) (hematoxylin and eosin × about 76).

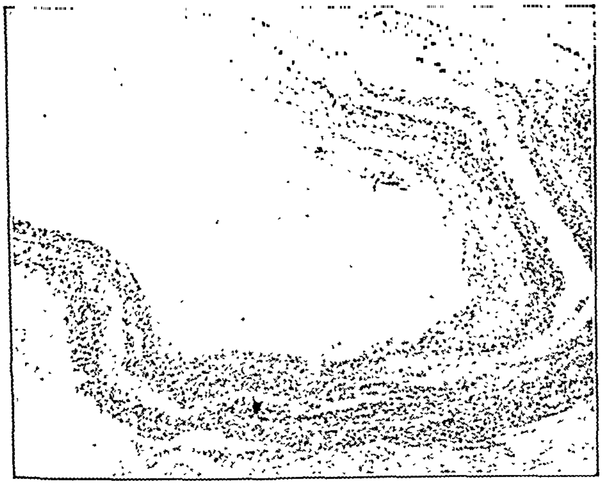

Fig. 3.—The cyst may be seen surrounded by nerve root substance (hematoxylin and eosin × about 41).

The patient was seen in consultation with her physician, Dr. Robert Patterson, on Aug. 8, 1947. The abnormal observations on examination at that time were: (1) well marked decrease of lumbar lordosis, (2) local pain on firm pressure over the fifth lumbar spinous process, (3) increase of pain along the posterior aspect of the right thigh on hyperextension of the back and also on right lateral flexion of the spine, (4) well marked decrease in power of dorsiflexion and, to a greater extent, of eversion of the right foot, (5) decrease in appreciation of pinprick of the outer aspect of the dorsum of the right foot and ankle and (6) absent right ankle jerk. It was my impression at this time that there was a protruded intervertebral disk, probably lumbosacral. Observations in roentgenograms of the lumbar and sacral aspects of the spine were normal. During the course of the next two weeks the patient suffered intense pain in the right lower limb and, in view of the severity of her discomfort, its duration and the fact that she was completely incapacitated, it was decided to carry out an interlaminar exploration for a herniated intervertebral disk. Myelography was considered unnecessary. It is of interest that when the patient was admitted to the hospital on August 29, for operation the next day, the observations were the same as aforementioned except that there was practically no pain on either hyperextension or lateral flexion of the spine. This fact tended to cast some doubt on the diagnosis of a herniated intervertebral disk, although operation was still clearly indicated.

Operative Procedure and Observations (August 30).—With the patient in the lateral recumbent position, right side uppermost, and under spinal anesthesia, later supplemented with intravenous injection of "pentothal sodium" (sodium 5 ethyl-5-[1-methylbutyl] thiobarbiturate), an incision was made just to the right of the middle exposing the spines of the fifth lumbar and first sacral segments. The soft tissue was separated from the spinous processes and laminas of these spines on the right side, and a hemilaminectomy retractor was introduced. The ligamentum flavum between the fifth lumbar and first sacral segments was removed, and the nerve root was clearly exposed. The root was in normal position and presented no abnormality whatever. The underlying intervertebral disk appeared normal. There was no bulge at all, but palpation of the lateral border of the disk revealed decreased resistance, and incision of the posterior longitudinal ligament and posterior part of the disk capsule enabled the forceps to enter the intervertebral disk for a distance of about 1 cm., with little force being applied to it. It was concluded that the disk presented a slight abnormality with respect to its decreased consistency, but could not possibly account for the clinical picture presented by the patient. There was not the slightest adherence between root and disk. The intervertebral disk and nerve root between the fourth and fifth lumbar segments were then explored, clearly exposed and observed to present no abnormality. The lower interspace was then reexamined, and it was observed that the epidural fat was being extruded from under the sacrum. As this fat was removed, a well marked bulge presented itself from

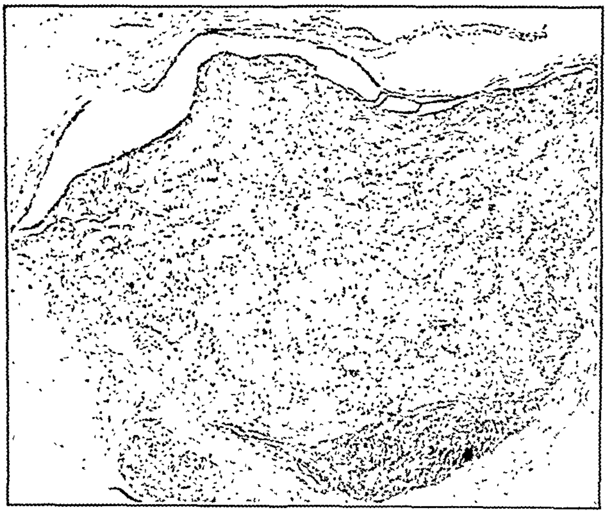

Fig. 4.—The cyst also occupied a portion of the perineurial space of the dorsal ganglion (hematoxylin and eosin × about 32).

under the posterior arch of the sacrum, just lateral to the margin of the thecal sac and medial to the nerve root (fig. 6). It was clear at this point that there was an abnormality under the posterior arch of the sacrum on the right side. Accordingly, removal of this portion of the arch was begun, and, as this was being accomplished, more and more of the lesion was brought into view. Finally, after removal of about 3 cm. of the posterior arch of the sacrum on the right side, full view of the cystic mass was effected. The lesion was present along the course of the second sacral root, which was enlarged in a fusiform manner. The tumor measured approximately 2 cm. in length and over 1 cm. in width, being about three times the width of the posterior root. It presented a reddish surface and was soft and fluctuant. Several large veins ran laterally along its course. The head of the table was elevated and then lowered, and no change in size of the cystic mass followed. Moreover, as the thecal sac was compressed, again no change in the size of the lesion occurred. Compression of the lesion itself did not obliterate its contents. It was then possible to conclude that the mass did not communicate with the subarachnoid space. A hypodermic needle attached to a syringe was introduced into the lesion, and an attempt was made to aspirate its contents. Only a few drops of fluid, pinkish as a result of admixture with blood and too little for analysis, was obtained, and the size of the mass did not diminish appreciably after the attempted aspiration. An incision was then made into the lesion and a portion of it excised. As this was done a decided decrease in the size of the remainder of the mass followed, as though escape of fluid contents through multiple small openings occurred. By means of a nerve hook it could be determined that the anterior nerve root was distinct from the fusiform mass which had clearly involved the dorsal root ganglion and approximately 1 cm. of the proximal portion of the nerve root. The entire lesion, including all but the distal end of the posterior ganglion at the point of its junction with the anterior root, was excised. There was no escape of cerebrospinal fluid during the procedure. The little bleeding that occurred was controlled by electrocautery and pieces of crushed muscle. The muscle was closed in two layers, the fascia in one layer, the subcutaneous tissue separately, and the cutaneous edges were also approximated with interrupted silk sutures. The patient's condition remained good throughout the procedure.

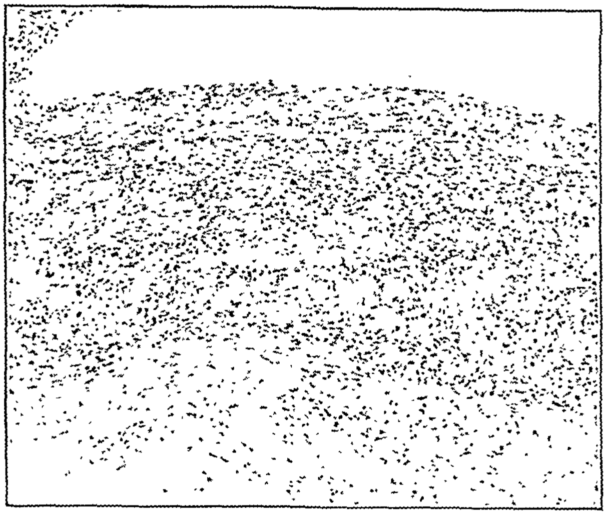

Fig. 5.—Nerve cells and other substance of the dorsal ganglion which formed a portion of the cyst wall (hematoxylin and eosin × about 80). (There is more detailed photographic depiction of the cysts shown in this figure and in figures 2, 3 and 4 in a previous description of this condition.[1])

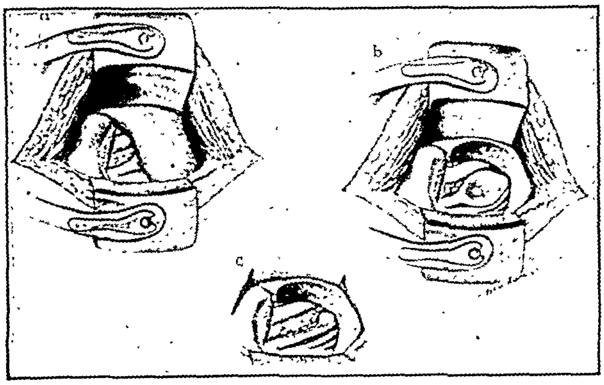

Fig. 6.—Sketches showing (*a* and *b*) appearance of cyst at operation and (*c*) the nerve root after removal of the cyst. In *a* the bulge of the cyst through the border of the sacrum was seen only after removal of the epidural fat in this region. Full view of the cyst arising from the posterior root of the second sacral nerve at its junction with the ganglion is seen in *b* after removal of a portion of the posterior arch of the sacrum. In *c* one sees the intact anterior root after removal of the cyst and corresponding segment of the posterior nerve root and dorsal ganglion.

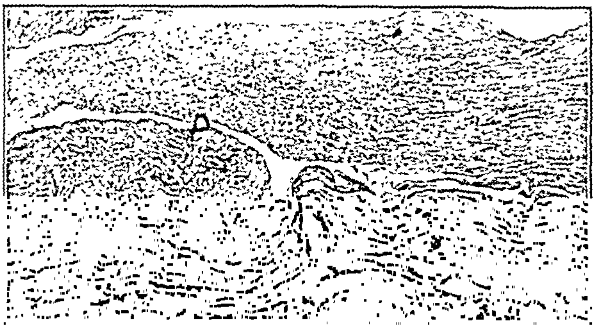

Fig. 7.—The cyst may be seen occupying the perineurial space (P) (hematoxylin and eosin × about 39).

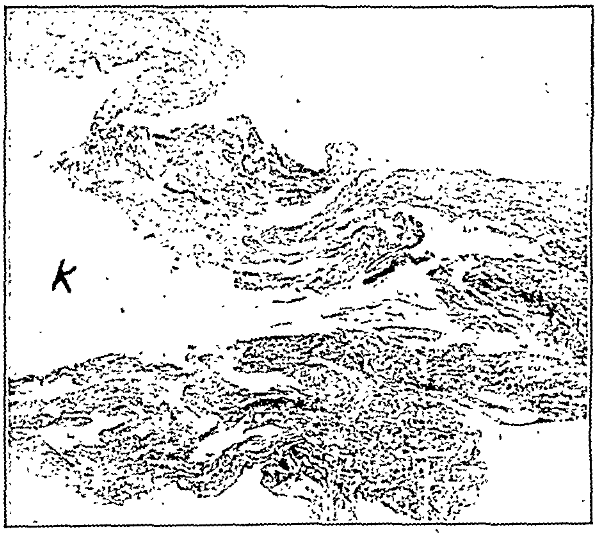

Fig. 8.—Photomicrograph of a portion of the cyst removed at operation, showing communication between the perineurial space and the main cavity of the cyst (K) (hematoxylin and eosin × about 28).

The patient made an uneventful convalescence from the operation. There was no difficulty in voiding or in the control of her bowels. The day after operation she was free from her previous lower limb pain, and there was a decided increase of power of the foot as well as in the appreciation of pinprick. Improvement continued, and on the seventh postoperative day, when the patient was allowed out of bed, power and sensation of the foot were entirely normal. The sutures were removed from the wound, which was well healed, at this time. The patient was discharged from the hospital on the eleventh postoperative day without any complaints and feeling happy with the result of the operation. She was last seen two months after operation, at which time she was carrying on with her full household duties. She complained of occasional mild darting pain of momentary duration in the posterior aspect of the right thigh, at the junction of the middle and lower thirds. At this site pinprick was associated with a somewhat diffuse "pins and needles" sensation. Otherwise examination revealed no abnormalities except for persistence of the absent right ankle jerk. The patient did not feel handicapped in any way.

The tissue removed at operation was fixed in 10 per cent formaldehyde and imbedded in paraffin. The following technics were then carried out on the sections: hematoxylin and eosin stain, Laidlaw's lithium silver carbonate impregnations for reticulin and collagen fibers; Gros-Bielschowski technic for axis cylinders, Spielmeyer's stain for myelin sheaths and cresyl violet preparations for ganglion cells.

Microscopic examination of serial sections of the various portions of the tissue removed at operation afforded the opportunity of reconstructing an accurate histologic picture of the lesion, which was a multiloculated cystic one (figs. 7, 8, 9, 10 and 11). The cyst occupied the posterior root abutting the proximal portion of the dorsal ganglion. Its main part was bordered by reticulin or by nerve fibers, some of which showed vacuolization, swelling and fragmentation of axis cylinders and myelin sheaths in Gros-Bielschowski and Weigert-Pal preparations, respectively. The degenerative changes affecting the nerve fibers were not widespread in the intact portions of the nerve root and occurred chiefly in certain regions of the wall of the cyst. Few of the ganglion cells adjacent to the cyst showed signs of chromatolysis consisting of pulverization and disappearance of Nissl's substance with migration of nuclei to a peripheral position, but most of the nerve cells appeared normal in cresyl violet stains. The cystic cavity communicated with the perineurial space and, in some regions, had caused considerable thinning of the overlying dural prolongation, the epineurium. Several miniature cysts were seen, occurring either as local dilatations within the perineurial space or as areas of fragmentation and rarefaction (figs. 9 and 11) within the parenchyma of the posterior root. There was no demonstrable communication between these various cysts. In a few areas bordering the cysts there were small accumulations of monocytes and lymphocytes, but this was not a prominent feature of the tissue and there was no evidence of recent or old hemorrhage or of neoplasm. No proliferative changes of the arachnoid or other tissues were present.

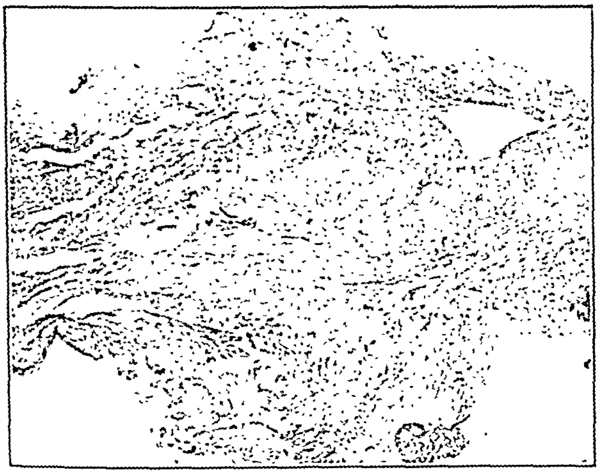

Fig. 9.—Smaller cystic spaces, resulting probably from rarefaction or a liquefactive type of degenerative change occurring in the posterior root, such as is also seen in figure 11 (hematoxylin and eosin × about 25).

COMMENT

There is no doubt that the patient's symptoms and signs were the result of the cyst which occurred along the extradural portion of the second sacral posterior nerve root, the lesion having compressed the neighboring roots. At operation a protruded intervertebral disk was not found. That the cyst was in position to have caused compression was shown by the fact that as the epidural fat just under the sacrum was removed a bulge of the cyst became apparent. More and more of this bulge appeared as the posterior sacral arch was removed bit by bit. The causal relationship between cyst and syndrome appears to have been confirmed by the postoperative course of the patient, whose sciatic pain, as well as motor and sensory abnormalities, almost entirely disappeared twenty-four hours after operation and were hardly demonstrable one week later. Although the presence of the cyst on the second sacral nerve root as well as the compression of the surrounding nerve roots may have accounted for the patient's severe pain, the motor and sensory signs must have been the result almost entirely of nerve root compression, since they vanished so quickly following operation. The fact that no sensory loss, but only a small area of paresthesia, could be observed following complete interruption of the second sacral posterior nerve root is in keeping with the conception of overlap of sensory dermatomes as demonstrated in animals by Sherrington and by Foerster[6] in human beings; this experience does not lend support to Keegan's[7] denial of such overlap.

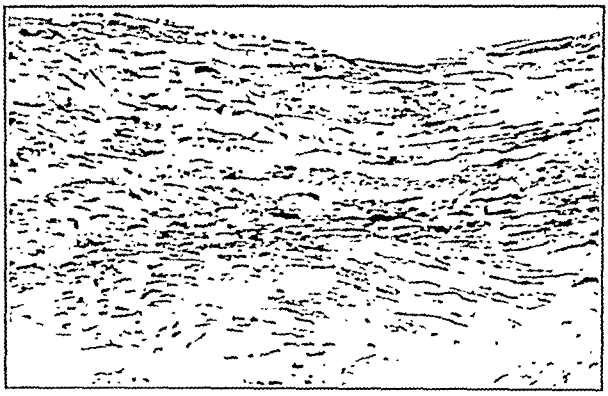

Fig. 10.—Axis cylinders occupying the wall of the cyst. Some of the axones have undergone swelling and fragmentation as a result probably of compression by the cyst (Gros-Bielschowski technic for axis cylinders × about 89).

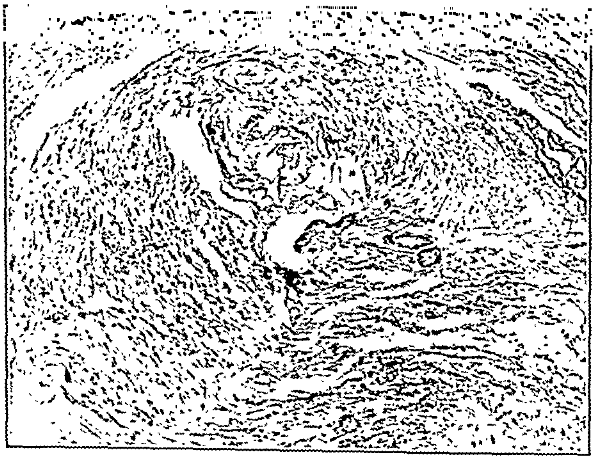

Fig. 11.—Photomicrograph showing degenerative change occurring in the posterior root (hematoxylin and eosin × about 73).

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[6] Foerster, O.: The Dermatomes in Man, Brain **56:** 1-39, 1933.

[7] Keegan, J.: Dermatome Hypalgesia Associated with Herniation of Intervertebral Disc, Arch. Neurol. & Psychiat. **80:** 67-83 (July) 1943.

It is significant that the cyst was not seen while exploration of the lumbosacral interspace for herniated disk was being carried out, although the first sacral nerve root was clearly exposed. The presence of the cyst might have been overlooked if the epidural fat just cephalad to the sacrum and under the rim of its posterior arch had not been removed. Only after removal of the cephalad 2 cm. of the posterior sacral arch on the right side was the lesion exposed in its entirety. It is therefore important to unroof the sacrum in order to determine whether perineurial cysts, especially those arising from the lower sacral roots, are present, since in the course of the ordinary interlaminar exploration for herniated intervertebral disks the region from which such cysts arise is not brought into view. It is possible that such lesions may be responsible for the sciatic syndrome in an appreciable number of the cases in which results of interlaminar exploration for protruded intervertebral disks prove negative. The technic of unroofing the sacrum is, of course, simple in the hands of competent surgeons and does not result in any weakening effect on the spinal column.

In the case reported the syndrome of sciatic nerve root compression appeared clearcut, so that myelography was unnecessary. If a myelogram with ethyl iodophenylundecylate had been done, it is unlikely that there would have been any apparent defect, since the cyst occupied a position 1 cm. or more distal to the origin of the nerve root from the thecal sac and it was not in continuity with the subarachnoid space. Unless the cysts attain a very large size, so that compression of the thecal sac or deformation of the short segment of arachnoid prolongation over the nerve root occurs, myelography would be of no value in establishing the diagnosis. However, I have had some experience recently with extradural myelograms, carried out after the injection of ethyl idiophenylundecylate ("pantopaque") into the lumbosacral epidural space. In some of these cases it has been possible to outline the lumbar and sacral nerve roots. It is possible that further experience with this technic may make it possible to portray roentgenographically perineurial cysts and other intraspinal lesions which arise from outside the limits of the subarachnoid space and thus establish the diagnosis before operation.

That the contents of the cyst did not communicate with the subarachnoid space is shown by the following observations: First, elevation and lowering of the head of the operating table did not alter the size of the cyst or the tension within it; second, compression of the cyst did not obliterate its contents, and, third, during the process of incision of the cyst and complete removal of it piecemeal, escape of cerebrospinal fluid did not occur.

The trauma which the patient sustained approximately ten days before the onset of her pain is rather suggestive of a causal relationship to the cyst, although not necessarily so. Histologic examination of the cyst showed no evidence of recent or old hemorrhage, which, if present, might have favored a traumatic origin. The cyst proved to be of the same histologic structure as the cysts encountered at autopsy.[1] They were not neoplastic, parasitic or dermoid, and there was no striking evidence of an inflammatory origin. The areas of rarefaction within the nerve root indicate a possible degenerative genesis. This possibility is supported by chemical examination of the cyst contents in a case encountered at autopsy. The total protein content of the cyst fluid was that of normal cerebrospinal fluid, but the potassium content was 62.5 mg. per hundred cubic centimeters, over four times that of normal cerebrospinal fluid.[8] This observation suggests degenerative changes affecting cells, which contain large quantities of potassium.[9] It should be stated that microscopic examination of the cyst fluid revealed no cellular elements within it. Whether similar cysts occur at higher levels is uncertain, since the autopsies [1] did not include examination of the dorsal ganglions of the entire spinal axis. Such a study, however, is now under way.

The exact incidence of perineurial cyst as a cause of sciatic or other nerve root pain remains to be determined. However, in view of my experience in autopsies in which such cysts were seen in 5 out of a total of 30 cases in which the spinal cord was examined, the clinical encounter of perineurial cysts may prove to be far from rare, if sought for. It is possible that, as clinical experience with this lesion accumulates, certain symptomatologic features or physical observations may emerge as leads in the preoperative diagnosis of this condition.

CONCLUSIONS

1. Perineurial cysts arising from the posterior sacral nerve roots can produce the sciatic syndrome.

2. In patients suffering from the sciatic syndrome thought to be due to a herniated intervertebral disk, requiring operation and in whom interlaminar exploration fails to reveal a protruded disk or other abnormality sufficient to have accounted for the pain, removal of the posterior arch of the sacrum should be done in order to determine whether a perineurial cyst is present. Moreover, in patients with persistent severe sciatic pain following negative results of explorations for herniated intervertebral disks, and in whom the known causes of sciatica have been excluded, consideration should be given to the advisability of exploration for sacral perineurial cysts. By following this practice the incidence of negative results of explorations in the surgical treatment of sciatica will probably be reduced.

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[8] Dr. Albert Sobel and Dr. Samuel Natelson, Department of Laboratories, Jewish Hospital of Brooklyn, made the chemical analysis of the cyst fluid and assisted in the interpretation of these data.

[9] Muntwyler, E., and Mantz, F.: Electrolyte and Water Equilibria in the Body, in Glasser, O.: Medical Physics, Chicago, The Year Book Publishers, Inc., 1944, pp. 371-376.

Second Era of Research in Chemotherapy.—During the past dozen years we have all witnessed the impact on medicine of what Sir Henry Dale has called the second era of research in chemotherapy, as manifested practically in the unparalleled usefulness of the sulfonamides, penicillin, and the newer antimicrobic drugs, and theoretically in the impetus which their discovery has given to new thought and experimentation on the metabolism of parasitic cells, the mechanisms of drugfastness, and the general principles of chemotherapy. Great as these achievements are, they were exceeded, in my opinion, by the attainments of bacteriology in the final quarter of the 19th century. For in that remarkable efflorescence, the genius of Pasteur, the logic of Koch, and the percipience of Lister permeated medicine with incredible rapidity, the immediate consequence being that a host of diseases which had puzzled and plagued mankind for centuries abruptly yielded their causes, and often their cures in addition, as fruits of the new science, while a vastly more important outcome was the fact that man had at long last identified and begun to study the bacterial creatures with which he lives.—Kidd, John G., *Bulletin of the Johns Hopkins Hospital,* June 1948.

GENERAL PRACTITIONERS SESSION

THE CHRONIC INVALID

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President, American Medical Association
Cleveland

PREVALENCE

The patient with chronic illness is one of the major challenges to modern society. Sooner or later some form of long term illness affects one or more members in most families of the nation. A conservative estimate suggests that more than one sixth of the population—some 25,000,000 persons—are afflicted with some chronic disease.[1] Approximately 2,000,000 of our population are chronic invalids at the present time, and the number is steadily increasing. It will increase still more as the control of other disorders which were so devastating heretofore is now being more effectively managed. The mortality rates from acute infections, nutritional deficiencies, glandular abnormalities, are falling. Many patients afflicted with cancer are being cured because of earlier diagnosis and complete eradication.

A report from New York State estimates that 7 out of every 10 deaths are due to some chronic illness. And while in 1900 chronic disease was the cause of 26 per cent of all deaths in New York, in 1940 almost 70 per cent of the fatalities resulted from prolonged illness. No age is immune. Some 40 per cent of the patients suffering from chronic illness are under 45 years of age, and in patients between 25 and 64 years of age, 60 per cent of the reported cases of long term illness are found. Chronic illness is also found among children, adolescents and those in the young adult years.

The extent of this problem is expanding. Inadequate persons, such as persons with mongolism and other unfortunates, formerly were frequently removed by a severe infection or some nutritional discrepancy. Now the control of these maladies is carrying over larger numbers of persons who are charges on society. The strain on family budgets and household organization is mounting. It therefore becomes necessary for planning on a much broader scale to meet the challenge of chronic invalidism.

The need for comprehensive planning to meet the challenge of chronic disease must be emphasized. While the economic and social aspects are of vital importance, the highlights in the problem of the chronic invalid are prevention, management and research. Since each year approximately 1,000,000 deaths are due to chronic illness and a billion days are lost from productive activity, it is high time that concerted action on a broad plane be directed to counteract this huge loss to our social existence.

As more persons are living longer, there is more opportunity for chronic illness to develop. To this extent aging of the population may be regarded as a contributory factor. However, it should be kept in mind that aging and chronic invalidism are not synonymous by any means. The misconception that old age is constantly visited by chronic invalidism must be dispelled. Many persons now have a vigorous and enjoyable senectitude free of prolonged illness.

Long term illness is one of the principal causes of economic hardship. The presence of a chronically ill patient in the family frequently alters the psychologic atmosphere within the home. When an attitude of defeatism is adopted by the patient and those around him, the outlook is likely to be hopeless.

THE MAJOR CHRONIC ILLNESSES

The major chronic illnesses are as follows: cardiovascular disorders, including arteriosclerosis, apoplectic stroke, rheumatic heart disease and syphilitic heart disease; the arthritic and rheumatic disturbances; mental diseases; advanced cancer; tuberculosis; diabetes; gastrointestinal disturbances of organic or functional origin; disorders of the genitourinary tract; the allergic states, and chronic alcoholism. Some 4,000,000 invalids are suffering from chronic heart disease. Vital statistics indicate that approximately 600,000 lives are lost each year as a result of a breakdown of the cardiovascular system in the form of cerebral hemorrhage, coronary occlusion or chronic heart failure. It has been estimated that approximately 10 per cent of all chronic disease cases fall into the group of cardiovascular disorders.

Arthritic and rheumatic disorders stand second on the list of the most common disabling afflictions—the exact number of invalids suffering from arthritis is not known. Available statistics are not satisfactory. This is because of the variation in terms and lack of exactness in diagnosis. There is a great need today for statewide surveys which will give a clear picture of the magnitude of the problem of chronic disease. With arthritic and rheumatic disorders, for instance, it is important to know the number of patients suffering from degenerative joint lesions, those suffering from acute infectious arthritis and the number in which a metabolic abnormality, such as gout, is the underlying factor. To know the extent of the problem is the first essential in a program of combating the ravages.

According to a recent summary[2] there are 641,331 beds for general hospital cases with an average census of 496,527. There are 674,930 beds for cases of nervous and mental disease with an average census of 635,769. With the use of shock therapy for certain types of mental illness the number of admissions to hospitals is increasing, while, at the same time, the length of stay is being reduced.[3]

This year approximately 180,000 lives will be lost because of cancer. It may be conservatively estimated that 75 per cent of these patients are bedridden or otherwise incapacitated to such an extent as to be classified as chronic invalids.

With the superb work of various organizations interested in the control of tuberculosis, the death rate is decreasing in those areas where modern health measures have been instituted for its control. According to statistics from the National Office of Vital Statistics, in 1945 there were 52,916 deaths—a ratio of 40.1; in 1944 there were 54,731 deaths—a ratio of 41.3, while in 1943 there were 57,005 deaths—a ratio of 42.6. It is unfortunate that there is no uniform method for reporting cases of tuberculosis. While there are not any accurate data on the total number of persons suffering from tuberculosis, various authorities have

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Read at the interim meeting of the American Medical Association, Cleveland, Jan. 8, 1948.

[1] Planning for the Chronically Ill, J. A. M. A. **135:** 343 (Oct. 11) 1947.

[2] Arestad, F. H., and Westmoreland, M. G.: Hospital Service in the United States, J. A. M. A. **133:** 1065 (April 12) 1947.

[3] Smith, L. H.: Personal communication to the author, Sept. 25, 1947.

estimated that at the present time there are approximately 1,500,000 patients. It should also be stated that tuberculosis is still the captain of the men of death in areas where modern control measures are not utilized.

While diabetes is listed as a chronic disease, and there are probably 2,000,000 persons with diabetes in the country at the present time, few of these are invalids. Modern control measures have greatly improved the status of the diabetic patient.

The high pressure of social existence at the present time is reflecting itself in the large number of persons suffering from some form of gastrointestinal disorder—the most frequent being peptic ulcer or colitis. Grouped with disorders of the gastrointestinal tract may be those conditions of chronic involvement of the biliary tract. Here, too, persons ofttimes are not sick and not well, but become chronic sufferers because of low grade efficiency.

With increasing years approximately 50 per cent of the male population becomes afflicted with prostatic hypertrophy. As the cardiovascular system becomes sclerotic prostatic lesions may be more pronounced.

It is estimated that 1.5 to 2 per cent of the population are chronic sufferers from some allergic condition, although they may not be incapacitated for long periods of time.

Chronic alcoholism must be regarded as a menace to the public health. Its devastations carry far beyond the destructive effects on the individual patient. A condition which has destroyed so many brilliant careers, disrupted so many homes and caused as much unhappiness as chronic alcoholism must be regarded as an important problem in the realm of chronic illness. The periodicity of bouts merely emphasizes the chronicity of the condition. While no accurate statistics are available, it has been estimated that there are 75,000 alcoholic addicts in the United States.[4] Although the alcoholic addict frequently is a social problem with the legal aspect, basically the condition is medical and needs concentrated study, the same as other chronic medical disorders. The National Committee for Education on Alcoholism and the organization known as Alcoholics Anonymous have rendered outstanding public service in emphasizing the need for rehabilitation of the problem drinker.

SOCIAL FACTORS

Long term illness produces an added burden on the patient's family. It adds one more problem case to the social agencies who exist for the purpose of neutralizing adverse social influences. If the invalid is the wage earner, the family's economic predicament becomes immediately acute, and economic dependency on society may result.

According to the National Health Survey,[5] chronic illness occurs most frequently in families with relatively limited financial resources. The rate of chronic illness found in families on relief in 1937 was about double that for families with incomes of $2,000 to $3,000 per year. The New York State Health Preparedness Commission in 1944 found in their investigation that some 37 per cent of persons receiving old age assistance were afflicted with some form of chronic illness, just double the average for their age group. As pointed out by Howard Rusk,[6] long term illness depletes earning power at a time when the patients are called on to pay more for their care than those who are suffering from an acute illness. An important additional burden is the common tendency on the part of the invalid to become a permanent dependent. Psychologic factors, such as boredom, lack of initiative to improve one's status and the acceptance on the part of relatives that the condition cannot be bettered, are some of the chief obstacles which must be removed if the chronic invalid is to be rehabilitated. Too many patients accept their illness with resignation and appear to be willing to become charges on society. A rehabilitation program has much to offer these persons.

DEFEATISM AND FEAR

Although chronic illness may occur in any age group, it is likely to be more devastating for older persons in society. Rusk[6] has emphasized the fear of chronic disease and disability as the most haunting spector of increasing age. In 1936 the National Health Survey indicated that 58 per cent of all persons 65 years and over suffer from some form of chronic illness or physical disability. It should be emphasized that there are many persons with some physical infirmity who are useful and productive members of society. It has frequently been pointed out that some form of chronic illness may teach persons the advisability of living a restricted existence, thereby enabling them to live out their normal life span. A psychologic atmosphere of defeatism and fear of the future is a major detrimental influence in perpetuating chronic illness. Greater attention to the patient's attitude and the creation of a buoyant and hopeful atmosphere are the first step in a sound rehabilitation program.

INSTITUTIONAL CARE

Persons with acute illness, particularly those due to the common infections, nutritional deficiencies and glandular disorders, are no longer in need of hospital care. A larger percentage of patients with chronic illnesses are now occupying hospital beds. Even so, because of the increase in the number as more persons grow into the later years, there is an acute shortage of beds for patients suffering from long term illness. It has been determined that 2 beds per thousand of the population are necessary for these patients. Few communities are equipped at the present time to care adequately for the number of patients who are chronic invalids.

It is generally agreed that the majority of these patients can best be cared for in the home or ambulatory clinic. Professional assistance from visiting nurse societies has been an invaluable aid in caring for chronically ill patients in their own homes. Here, too, demands are steadily increasing, and the estimated minimum of 1 nurse per two thousand of the population to participate in the nursing activities for chronic invalids is far short of the required optimum.[7] Since there is such a drastic shortage of professional nurses, wider use should be made of practical nurses and nurses' aides working under the supervison of the public health nurse. These aides should be able to perform the less specialized procedures under the supervision of a professionally trained nurse.

The hospital care for long term illnesses needs to be geared to their particular requirements. It has already been pointed out that the tendency to establish hospitals for chronic disease in areas remote from medical centers is unfortunate.[1] Stagnation is too likely to occur when patients are relegated to an institution where custodial care too often exists in the absence of an aggressive medical program for improving the patients' chances for rehabilitation. Therefore it is an established principle that, wherever possible, special departments in general hospitals should be created for the care of persons suffering from long term disease.

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[4] State Commission Studies Alcoholism, Pennsylvania's Health, Department of Health, Commonwealth of Pennsylvania, October-December 1947.

[5] National Health Survey, Bulletin 6.

[6] Rusk, H.: New York Times, May 25, 1947.

[7] Haupt, A. C.: National Unity in Public Health Nursing, Public Health Nursing 37: 3 (Jan.) 1945.

Where invalidism is likely to be permanent and progressive, nursing homes, either public or private, are the answer. Here again there is a dearth of facilities. In all of the metropolitan areas of the nation the need for more nursing homes is evident.

PREVENTION AND PROPHYLAXIS

Energetic and well organized programs for control have brought about a substantial reduction in the mortality rate of pneumonia, typhoid, smallpox, diphtheria and scarlet fever. Public education in reference to venereal disease should greatly limit the ravages of this prevalent nuisance. The early detection of cancerous growths, when these are localized and if they are completely eradicated, will substantially reduce the mortality rate from cancer. Here again, the need for cooperation on the part of all agencies interested in health is a basic essential. If health is the nation's greatest asset, a positive health program with regular health surveys should be set up as part of the school systems of the country. Industry and labor have an excellent opportunity to play a dominant role by establishing health surveys of all employees. The major industries and the school systems of the nation together, in collaboration with medical authorities, should create a program for positive health which, among other benefits, should be able to uncover incipient lesions at a time when their eradication is possible.

Hospitals should, in reality, become health and diagnostic centers where practicing physicians might refer their ambulatory patients for diagnostic surveys in all problem cases. In the past, the practice of limiting hospital services to bed patients was not in the spirit of early diagnosis and prophylactic services. The point of view needs be changed from that of curative to that of preventive and prophylactic medicine in the field of health. Health rather than sickness should be stressed.

In a health educational program, as persons learn their vulnerable points and tend to reinforce themselves against possible breakdown, chronic illness may less likely occur. In the last analysis, each person is responsible for his own well-being. He should make an appraisal of his physical assets and know his liabilities, and plan accordingly for the future.

TOMORROW'S HEALTH

Our health tomorrow depends on our researches of today. The next substantial increase in the life span will occur when the two great killers, vascular degeneration and cancer, are brought under control. These maladies destroy three quarters of a million citizens every year. Unless measures for control are developed, as folks grow into the vulnerable years, this number will increase. What can be done about it?

The great need is a clearer understanding of the progression of events occurring in the blood vessels and cells of the body, which appear as blood vessels deteriorate and as cells lose their objectivity and become cancerous. New tools of the greatest significance are now available for accurate examination of the steps by which normal tissues deteriorate and either break down or become cancerous. With the use of radioactive isotopes, which serve as neon lights, information of great practical value should be made available concerning the basic causes of vascular degeneration and cancer. As tagged atoms of carbon, calcium, iron, phosphorus, sulfur and the others are followed through the body, the intermediary metabolism of the various food stuffs should be clarified. Earliest deviations from the normal will be identified, and a better understanding of the pathologic physiology should ultimately lead to effective measures of control. Here, as I see it, is the great opportunity for modern science.

As the physical disorders—the major killers—are being subjected to critical study, the need for research in the field of psychiatric and psychosomatic afflictions is evident. The technics that lead to new insight into the processes of physical breakdown should give us more knowledge of our mental processes. We are facing a new day in the realm of medical science. Medicine has much to offer a world which is suffering from insecurity and which longs for peace of mind. A more vigorous and a more healthy population, steadily waging a successful battle for the control of the devastating diseases which afflict our fellow men, should be well equipped to study ways and means for bringing about a more stable social order.

Clinical Notes, Suggestions and New Instruments

PROLONGATION OF ACTION OF HEPARIN

JEFFERSON J. VORZIMER, M.D.
LEON N. SUSSMAN, M.D.
and
MAXWELL J. MARDER, M.D.
New York

An ideal anticoagulant should be easy to administer, have a prolonged action and be free of harmful side effects. It should be relatively inexpensive and should not require frequent laboratory control for its safe administration. Neither heparin nor "dicumarol," as now commonly used, satisfies these requirements. Heparin[1] has well known pharmacologic advantages over "dicumarol," but the necessity of repeated intravenous injection plus its high cost have acted as a deterrent to its common use. "Dicumarol"[2] necessitates daily venipuncture and repeated prothrombin determinations, and it is difficult to control its action because of the fluctuation in its effects. Search for a more ideal anticoagulant has resulted in various preparations of heparin, all of which attempt to facilitate its administration. Thus Loewe and his co-workers[3] used Pitkin's menstruum as a vehicle for subcutaneous use of heparin, and Stats and Neuhof[4] injected intramuscularly a concentrated aqueous solution of heparin.

During the past year we have been studying the effects of the administration of heparin in various menstruums calculated to prolong the anticoagulant action of the drug. After many

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Aided by a grant from Mr. Jack Beeber.

From the Medical Service of Beth Israel Hospital, New York.

[1] Jorpes, J. E.: Ann. Int. Med. **27**: 361, 1927.

[2] Allen, E. V.; Hines, E. A.; Evale, W. F., and Barker, N. W.: Ann. Int. Med. **27**: 371, 1947.

[3] Loewe, L.; Rosenblatt, P., and Hirsch, E.: Venous Thromboembolic Disease, J. A. M. A. **130**: 386 (Feb. 16) 1946.

[4] Stats, D., and Neuhof, H.: Am. J. M. Sc. **214**: 159, 1947.

experiments in which the amount and concentration of heparin were varied, with different kinds and quantities of menstruums, we were able to obtain prolongation of the coagulation time[5] to from 200 to 900 per cent of normal for seventeen to twenty-four hours with a single intramuscular injection of heparin.

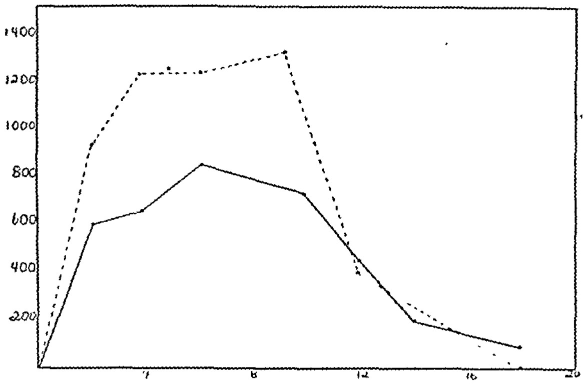

Fig. 1.—Graph of coagulation time (percentage of normal, vertical column of figures) in 2 cases (one represented by the broken line and the other by the unbroken line), showing the effect of administration of 200 mg. of heparin in 1 cc. of aqueous solution emulsified in 1 cc. of menstruum. The horizontal row of figures shows the number of hours after the injection.

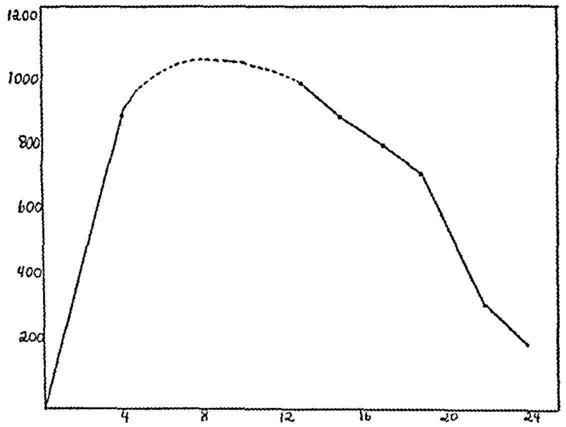

Fig. 2.—Effect of the administration of 300 mg. of heparin emulsified in 1 cc. of menstruum. The vertical column of figures shows the coagulation time in percentage of normal, and the horizontal row of figures indicates the number of hours after the injection.

Data for Eleven Subjects

Patient	Weight (Lb.)	Heparin Dose (Mg.)	Coagulation Time, Percentage Above Normal at Peak	Duration of Therapeutic Effect* (Hr.)
1	135	200	1000	16
2	107	200	900	17
3	126	200	1400	17
4	166	300	800	17
5	140	300	600	17
6	160	300	400	19
7	115	300	900	24
8	120	300	700	15
9	103	300	1100	20
10	134	300	500	18
11	115	300	1400	20

* Two hundred per cent of normal.

This simplification of heparin administration was effected by the use of concentrated heparin[6] (200 mg. per cubic centimeter of aqueous solution) emulsified in 1 cc. of a mixture of cholesterol derivatives (35 per cent), peanut oil (65 per cent) and beeswax (2 per cent). It was observed that approximately 1.5 to 2 mg. of heparin per pound of body weight was necessary to maintain this effect. If the volume of menstruum and the volume of heparin solution were kept equal, the sustained action of the heparin could be assured. There was no hemorrhage at the site of injection, and pain was negligible. Despite prolongation of the coagulation time to from 600 to 900 per cent of normal, in 1 case to 1,400 per cent of normal, no bleeding occurred. The injection had no toxic effects. Controls, illustrated in figure 4, demonstrated that the menstruum alone had no effect on coagulation time, whereas the injection of 1 cc. of aqueous solution of 200 mg. of heparin produced an increase in the coagulation time of only six hours' duration.

SUMMARY

The anticoagulant effect of heparin was prolonged by incorporation of this substance in various menstruums. A concentration of 200 to 300 mg. per cubic centimeter of aqueous heparin solution emulsified in an equal quantity of menstruum composed of cholesterol derivatives (35 per cent), peanut oil (65 per cent) and beeswax (2 per cent) gave the most satisfactory prolongation of the coagulation time. With this technic the coagulation time of the blood was prolonged from 200 to 900 per cent of normal for a period of seventeen to twenty-four hours after a single intramuscular injection. The dosage of heparin varied with the weight of the patient, approximately 1.25 to 2 mg. per pound of body weight being required. Further experiments involving the use of vasoconstrictors and other menstruums are being conducted.

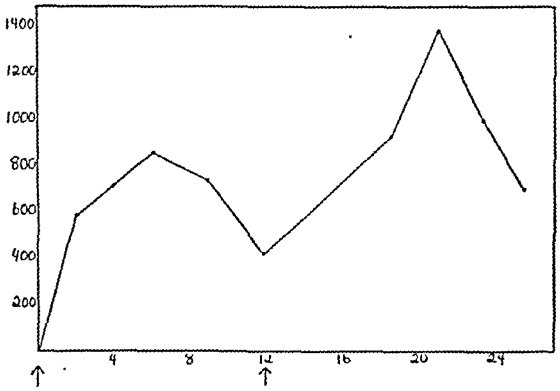

Fig. 3.—Effect of the administration of two injections of 200 mg. of heparin in 1 cc. of menstruum at twelve hour intervals. The vertical column of figures shows the coagulation time in percentage of normal, and the horizontal row shows the number of hours after the injection. The injections were given at the time indicated by the arrows.

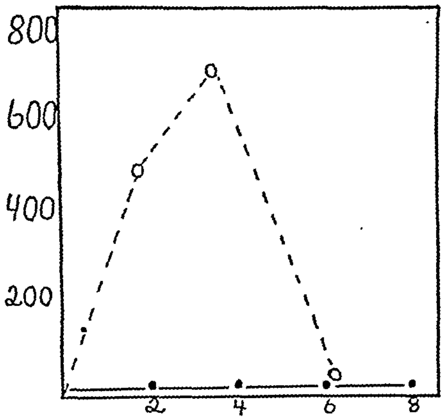

Fig. 4.—Graph of results in controls. Effect of the intramuscular injection of 200 mg. of heparin in 1 cc. of aqueous solution with no menstruum (broken line with circles) and the effect of intramuscular injection of 1 cc. of menstruum alone (broken line with dots).

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[5] Coagulation time determination was by the Lee-White three tube method.

[6] Heparin was supplied by The Upjohn Company.

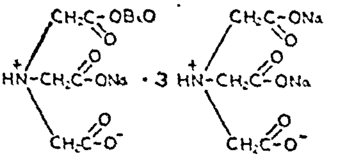
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

BISMUTH SODIUM TRIGLYCOLLAMATE.—Bistrimate-C. D. Smith.—A double salt of bismuthyl sodium triglycollamate and disodium triglycollamate containing approximately 18.3 per cent of bismuth.—$C_{24}H_{28}O_{25}N_4BiNa_7$.—F. W. 1142. The structural formula of bismuth sodium triglycollamate may be represented as follows:



Actions and Uses.—Bismuth sodium triglycollamate is designed to provide bismuth in a form effective for oral administration in the treatment of syphilis. It may be used as an adjunct with arsenicals or other agents shown to be effective in the treatment of the disease. It may be used alone in the management of certain forms of the disease, but it should not be solely relied on for curative therapy of early or active syphilitic infection. It is primarily indicated when there is intolerance to other drugs or other forms of bismuth ordinarily employed for the same purpose.

Bismuth sodium triglycollamate is subject to the same contraindications as bismuth preparations in general.

Dosage.—Bismuth sodium triglycollamate is administered orally in tablet form, usually prescribed in single doses of 0.41 Gm. (75 mg. of bismuth) two or three times daily after meals to provide a total daily dosage of from 0.82 Gm. (150 mg. of bismuth) to 1.23 Gm. (225 mg. of bismuth). The higher total daily dosage is desirable to maintain a satisfactory bismuth excretion level, but this may be temporarily reduced to the lower figure to overcome gastrointestinal disturbances that are occasionally encountered.

Tests and Standards.—

Bismuth sodium triglycollamate occurs as a white, odorless, crystalline powder with a somewhat salty taste. It is stable on exposure to air and is unaffected by light. It is very soluble in water but insoluble in organic solvents such as acetone, benzene and ether. The *p*H of a 2 per cent aqueous solution is between 7 and 8.

Add a drop of diluted hydrochloric acid to 0.1 Gm. of bismuth sodium triglycollamate: effervescence does not occur (*carbonate*). One gram of bismuth sodium triglycollamate should show no more chloride than corresponds to 0.5 cc. of fiftieth-normal hydrochloric acid (*U.S.P. XIII*, p. 709).

Dissolve 2 Gm. ot bismuth sodium triglycollamate in 15 cc. of distilled water, add 5 cc. of diluted hydrochloric acid and shake the mixture until precipitation is complete. Collect the crystalline precipitate on a filter and use the filtrate for later tests. The melting point of the washed, dried crystals is not less than 225 C. Dissolve about 0.1 Gm. of the crystalline product, accurately weighed, in 50 cc. of hot water; add 2 drops of phenolphthalein T.S., and titrate with twentieth-normal sodium hydroxide. The neutralization equivalent should be not less than 94 and not more than 97.

Add 5 drops of barium chloride T.S. to 5 cc. of the filtrate: the solution shows no more sulfate than corresponds to 0.25 cc. of fiftieth-normal sulfuric acid.

To another 5 cc. portion of the filtrate add an equal amount of sulfuric acid (*caution!*) and cool the mixture. Superimpose ferrous sulfate T. S.: no brown ring is produced at the junction of the two liquids (*nitrate*).

Ignite 3 Gm. of bismuth sodium triglycollamate in a quartz crucible, not above 700 C., cool and cautiously add, dropwise, just sufficient nitric acid to dissolve the residue when warmed. Pour the acid solution into 100 cc. of water, evaporate to 30 cc., filter and take three 5 cc. portions of the filtrate. To one portion add an equal amount of diluted sulfuric acid: the liquid does not become cloudy (*lead*). To the second portion add an excess of ammonium hydroxide: no bluish tint develops (*copper*). To the third portion add diluted hydrochloric acid: a precipitate insoluble in excess hydrochloric acid and soluble in strong ammonia solution is not formed (*silver*).

Mix 0.2 Gm. of bismuth sodium triglycollamate with 2 cc. of sulfuric acid. Heat the mixture until fumes of sulfur trioxide are evolved. Cool and dilute with water until the solution measures 5 cc. This solution meets the requirements of the test for arsenic (*U.S.P. XIII*, p. 618.).

Dry about 1.2 Gm. of bismuth sodium triglycollamate, accurately weighed, at 100 C. for two hours: the loss in weight does not exceed 2 per cent.

Ignite about 1 Gm. of dried bismuth sodium triglycollamate, accurately weighed, in a shallow porcelain crucible in a muffle furnace at 700 C. Cool, dissolve the residue with 5 cc. of hydrochloric acid and transfer the solution quantitatively to a 250 cc. beaker with 100 cc. of water. Heat it to boiling and saturate the solution with hydrogen sulfide. Collect the precipitate on a tared Jena or Gooch crucible and wash it successively with water, alcohol, ether, carbon disulfide, alcohol and ether. Dry the residue to constant weight at 100 C., cool and weigh: the bismuth content calculated from the weight of bismuth sulfide obtained is not less than 18 per cent and not more than 19 per cent.

Carroll Dunham Smith Pharmacal Company, New Brunswick, N. J.

Tablets Bistrimate: 0.41 Gm. Each tablet contains the equivalent of 75 mg. of bismuth.

U. S. patent 2,348,984.

Council on Foods and Nutrition

STATEMENT

The Council on Foods and Nutrition has long been opposed to the indiscriminate fortification of general purpose foods. Some exceptions to this rule have been recognized, however, such as the fortification of the general milk supply with 400 units of vitamin D per quart and the addition of iodine to table salt. The Council has not regarded the further fortification of the general milk supply, as is sometimes proposed, as being in the interest of public health and has so expressed itself in its regulations. Milk products which are made and sold as special purpose foods for particular groups of the population belong in a different category and are accepted on the basis of their individual merits.

At its meeting on May 8, 1948, the Food and Nutrition Board of the National Research Council prepared a statement concerning the addition of vitamins to milk which is in essential agreement with the opinion expressed by the Council on Foods and Nutrition. At its annual meeting on June 26, 1948, the Council voted to affirm the Board's opinion as expressed in the following statement.

James R. Wilson, M.D., *Secretary.*

ADDITION OF VITAMINS TO MILK

Statement of the Food and Nutrition Board, National Research Council, Adopted May 8, 1948

The Food and Nutrition Board has reviewed its previous actions concerning fortification of milk and reaffirms its decisions. In order to avoid possible misinterpretation of these decisions the following statements are intended to clarify the Board's position.

According to the decision of Dec. 2, 1944, the Food and Nutrition Board does not favor fortification of the general milk supply with minerals or vitamins other than vitamin D. The Board favors fortification of milk with vitamin D to the level of 400 U. S. P. units to the quart when the milk is used as a source of this vitamin. The Board favors fulfilment of the nutritional needs of the people by the use of ordinary foods so far as practicable. To that end it encourages education in proper choice of foods, improvement of food production, manufacture and preparation so as to increase and retain more fully the essential nutrients naturally present, and improvement in distribution so that diets adequate for health may be available to all persons.

According to the decision of July 1947, fortification of milk with vitamin A is not needed because in the United States diets adequate in vitamin A are available and fortification of milk with vitamin A is deemed unnecessary as a general public health measure.

The preceding decisions were not intended to hinder appropriate study and development of nutritionally useful new products. The Board realizes that development in technology and nutrition is rapid and does not favor restrictions which unduly handicap such progress. It did not assume and does not now intend that its decisions cited above should be interpreted as grounds for prohibiting investigation and market trials with milk modified by the addition of appropriate ingredients in reasonable amounts.

Modified forms of milk generally involve advance in price, at least during the early period of development. The Board emphasizes that wider and more uniform consumption of milk is highly desirable from the standpoint of public health, and it is particularly concerned with making available the best quality of milk at low cost.

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SATURDAY, NOVEMBER 6, 1948

ASEPSIS IN THE TREATMENT OF BURNS

Severe burns are frequently complicated by infection; surprisingly, however, the concept that a burn is a wound requiring the aseptic precautions ordinarily followed in the surgical management of other types of injury has been less widely recognized. Delay in acceptance of this concept of burns apparently stems from the formerly prevalent idea that infection in a burn was more or less inevitable, so that more attention has been focused on treatment than on prevention of infection. Apparently few careful investigations have been made to determine the exact sources of infection commonly contaminating burns.

Colebrook, Duncan and Ross[1] have recently drawn further attention to the causes of infection and have emphasized the need for asepsis in the local management of burns. These observers present the results of a bacteriologic study of 734 patients, including both sexes and all types of burns, during three years from 1945 to 1947. The patients were treated under conditions aimed at eliminating not only "contact" infections from hands and instruments, but also air-borne infections. They sought to determine the presence and source of infections by repeated bacteriologic examination of burn areas to discover, first, whether infection had been acquired in the hospital and, second, whether this occurred at the time of dressing the wounds ("contact" infections) or during the intervening time between dressings, i. e., air-borne cross infection from the hospital ward. Burns were dressed by aseptic surgical technic with local antiseptic agents under conditions that provided for the exclusion of air-borne infection in a specially designed room of the hospital. Care was taken to obtain perfect covering of the burns, and skin replacement was made at an early stage. By these procedures the investigators report bacteriologic evidence of hemolytic streptococcic and pyocyanic infection acquired at the time of dressing in less than 1 per cent of the patients. They point out that it has been more difficult to control cross infection occurring in the hospital wards between dressings. This was largely due to difficulty in obtaining adequate covering of the burns in areas about the face, buttocks or perineum, so that interference with the dressings by the patient led to contamination by direct contact or from air-borne dust. Another factor involves soaking of the dressing by serum exudation of the wound so that bacteria on the outside find an avenue for entrance through the dressing. Cellophane is suggested as a bacterial barrier.

In the study reported, streptococcic infections proved the easiest to control with locally applied penicillin, whereas infections by Pseudomonas aeruginosa and Staphylococcus aureus were more difficult to eliminate. The older system of admitting patients with burns to general wards of hospitals is unsatisfactory, because most of the sepsis of burns is due to preventable infection acquired in the hospital. Two objectives should be kept in view in the local management of burns: (1) blocking the transmission of pathogens at the time of dressing and (2) blocking of infection between dressings while the burns are covered. The investigators recommend that hospital facilities be provided for early isolation in all burn cases and for strict barrier nursing of all infected burns.

PORTACAVAL SHUNTS FOR PORTAL HYPERTENSION

Portal hypertension develops secondarily to partial or complete obstruction of the portal blood flow. The obstruction may be one of two types, intrahepatic or extrahepatic, or a combination of both. The site of the portal block, whether intrahepatic or extrahepatic, can usually be determined by certain tests of hepatic function. According to Whipple,[1] a high retention of sulfobromophthalein sodium in the blood thirty minutes after intravenous injection, a positive reaction to the hippuric acid test, a reversal of the albumin-globulin ratio, a positive reaction to the cephalin flocculation test, all point to the diagnosis of cirrhosis of the liver with intrahepatic portal block. If these reactions are negative, one can assume that the block is extrahepatic.

Intrahepatic block may be caused by portal cirrhosis of the Laennec type or by thrombosis of the hepatic veins, the so-called Chiari syndrome. The extrahepatic block may be congenital, the result of thrombosis of the portal vein or of one or more of its tributaries. A combination of the two main types may occur. Whipple described a form of extrahepatic block caused by cavernomatous transformation of the portal vein.

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[1] Colebrook, L.; Duncan, J. M., and Ross, W. P. D.: The Control of Infections in Burns, Lancet 1: 893-899 (June 12) 1948.

[1] Whipple, A. O.: The Problem of Portal Hypertension in Relation to the Hepatosplenopathies, Ann. Surg. 122: 449-475 (Oct.) 1945.

The syndrome of extrahepatic portal bed block described by Banti is characterized by secondary anemia, leukopenia, splenomegaly and a tendency to repeated massive gastrointestinal hemorrhages, most frequently associated with ruptured esophageal varices. The liver may be cirrhotic or may be normal, depending on the site of obstruction.

The idea of shunting portal blood into a systemic vein was conceived by Eck, a young Russian doctor working in Pavlov's laboratory. In 1877 he performed an anastomosis between the portal vein and the vena cava in a dog. The operation of diverting most of the portal blood from the liver appeared at the time too hazardous and was therefore not attempted on human beings. However, much to Eck's surprise the operation became a standard physiologic method, known as Eck's fistula, in studies of hepatic function. The dog on which Eck had performed the operation escaped from the animal house of the Military-Medical Academy (St. Petersburg), so that Eck was not able to observe the effect of the fistula. He did not occupy himself further with experimental physiology but became a popular physician in St. Petersburg.[2] Among the few successful attempts to perform a portacaval shunt in human beings are the case of Rosenstein in Germany and that of Bogoraz in Russia. Bogoraz anastomosed the superior mesenteric vein to the inferior vena cava. George Whipple[3] and his co-workers made the Eck fistula on dogs so that only the blood from the hepatic artery reached the liver. They found rather insignificant histologic changes in the liver and few functional abnormalities. The dog can tolerate the fistula from one to eight years.

The recent interest in portacaval shunts in the treatment of portacaval hypertension in human beings has resulted at least partially from the nonsuture method for blood vessel anastomosis devised by Blakemore and Lord.[4] Whipple[1] and Blakemore have carried out five splenorenal anastomoses, after removing the spleen and the left kidney, and five anastomoses of the portal vein to the inferior vena cava, end to side. All these patients have survived their operations. Blalock[5] prefers the suture method, believing that there is less likelihood of thrombosis with this method than there is in using a large foreign body such as vitallium ® tube used in the nonsuture method.

Linton[6] and his associates performed portacaval shunts in 15 patients. They feel that operation of choice should be, whenever possible, a splenectomy and the suture type of end to side splenorenal anastomosis with preservation of the kidney. They have also employed successfully anastomosis of the superior mesenteric vein to the inferior vena cava and of the inferior mesenteric vein to the left ovarian vein in 2 patients who had had the spleen previously removed. They feel that direct anastomosis of portal vein to the inferior vena cava may frequently be too hazardous because of the extreme degree of vascularity in the region of the gastrohepatic ligament.

The result of a successfully carried out portacaval shunt is to prevent serious hemorrhages from esophageal varices, to reduce portal hypertension and to improve hepatic function.

MEDICAL SCIENCE AND THE ADMINISTRATION OF JUSTICE

One of the basic principles of the political credo of the United States places on the government responsibility for administration of the law with justice and humanity. Throughout most of the United States, government fails to provide a competent investigative agency for acquiring such medical facts as may be needed to recognize the crime of murder, to apprehend and convict murderers and to protect those unjustly suspected of murder.

One death in every 5 in the United States is either known or suspected to have resulted from violence or has occurred unexpectedly from obscure causes. Each year approximately 300,000 such deaths occur. In this tremendous annual pool of criminal, suspicious and obscure deaths 13,000 murders are officially recognized —1 murder per year for every 10,000 living persons. Over 250,000 persons now alive in the United States will be the victims of homicide. Since such deaths are investigated in most places by the archaic office of county coroner, the number of murders that actually take place or the number of deaths actually due to accident, suicide or natural causes that are erroneously attributed to murder cannot be estimated.

In most states the coroner's office is so incompetent in the acquisition and interpretation of medical facts that only when murders have been witnessed or when bodies bear wounds regarded as being obviously homicidal are the deaths likely to be reported as murders.[1] In regions where competent medical investigations of such deaths are conducted, in 10 per cent to 20 per cent of all murders the crime appears to be unwitnessed and the body does not display external wounds that can be regarded as indicative of homicide. With reasonable certainty it may be said that several thousands of murders pass unrecognized each year in the United States because of the absence of a competent agency for the acquisition of medicolegal information.

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[2] Babkin, B. P.: Personal communication.

[3] Whipple, G. H.; Robscheit-Robbins, F. S., and Hawkins, W. B.: Eck Fistula Liver Subnormal in Producing Hemoglobin and Plasma Proteins on Diets Rich in Liver and Iron, *J. Exper. Med.* **81:** 171-191 (Feb. 1) 1945.

[4] Blakemore, A. H., and Lord, J. W., Jr.: A Nonsuture Method of Blood Vessel Anastomosis, J. A. M. A. **127:** 685-691 (March 24) 1945; ibid. **127:** 748-753 (March 31) 1945.

[5] Blalock, A.: The Use of Shunt or By-Pass Operations in the Treatment of Certain Circulatory Disorders, Including Portal Hypertension and Pulmonic Stenosis, Ann. Surg. **125:** 129-141 (Feb.) 1947.

[6] Linton, R. R.; Hardy, I. B., Jr., and Volwiler, W.: Portacaval Shunts in the Treatment of Portal Hypertension, Surg., Gyn. & Obst. **87:** 129-144 (Aug.) 1948.

[1] Report of the Committee of the American Medical Association to Study the Relationship of Medicine and Law, J. A. M. A. **125:** 577 (June 24) 1944.

Unfortunately, nonrecognition of murder is not the only danger inherent to the coroner system as it functions in most areas. Not only has the United States a greater incidence of recognized murder per unit of population than any other civilized nation in the world, but it also has the highest rate of unsolved crime. Scientific evidence which could aid in the apprehension and conviction of the criminal is rarely acquired by the average coroner's office. Recognition of evidence pertaining to the precise nature of the instrument of death, the sequence of injuries, the time of injury, the time of death, the identity of the decedent and the various traces that might associate the criminal with the crime requires a degree of expertness and experience on the part of the medical investigator that is rarely if ever found in an office administered by an elected official whose only qualification is that he or she is a registered voter of the county. Failure to acquire available information of these kinds often leads to failure to arrest, or else to false arrest, to wrongful conviction and to unduly protracted or unsuccessful prosecution.

Less important statistically but of tremendous moral importance is the fact that investigative incompetence occasionally leads to suspicion or prosecution of persons for murders that were never committed. Marks on a body that appear to the lay coroner and his jury and sometimes even to a physician inexperienced in legal medicine as evidence of criminal violence are sometimes due to misadventure or suicide. If in such circumstances there appear to be motive and opportunity for some one to have committed murder the inquest may charge some one with a crime that was never committed. Incompetent medical evidence derived from the coroner's office can only be responsible for many unfounded criminal proceedings.

A few states[2] have already established medical examiner systems, headed by a competent pathologist with experience in legal medicine and staffed by physicians within the state—these last serve on a part time basis. The function of such a system is to provide reliable facts which would not otherwise be available. The purpose of this fact finding is the ever closer approximation of law and its administration to the fullest justice. Justice can show neither fear nor favor, bias nor bigotry. It can tolerate neither ignorance nor charlatanry. In many parts of the United States the people have suffered, and are suffering, under these perversions of justice.

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[2] Maryland: Department of Postmortem Examiners, Laws of 1939, Chapter 369. Virginia Law: Governing Postmortem Examinations, Coroners, etc., Chapter 355, Acts of Assembly, 1946.

Current Comment

A NEW HEALTH BULLETIN

Periodicals on health for the public issued by health departments are relatively common. Similar publications by state medical societies still remain unusual. The Arizona Medical Association presents a new publication[1] entitled *Health Activities Bulletin,* published "in the interest of *your* health." This bulletin, which is a 24 page quarterly with a statewide circulation of 5,000 in 1948, is one expression of the activities of two committees created by the Arizona Medical Association in 1947. The first issue has a diversified table of contents including an article on child guidance, one on physical education, one on health in public schools and one on the public health nurse in the schools. There are a special article on infantile paralysis, a page devoted to the Woman's Auxiliary, a listing of health services available in Arizona and a scattering of short features. The entire makeup of the *Bulletin* is attractive and creditable.

ST. LUKE

October 18 was the Feast of St. Luke, who among all saints is the patron saint of physicians. In many places the day was celebrated by medical colleges and hospitals with special ceremony. Luke was referred to by St. Paul as "My beloved Luke, the physician." By strange coincidence, when William Harvey of England entered the medical school of the University of Padua in Venice in 1598, it is recorded that the academic year began on October 18 with a celebration of mass in honor of St. Luke. In a baccalaureate sermon entitled "The Beloved Physician," the Rev. John R. Cunningham, president of Davidson College, emphasized the fact that Luke was particularly concerned with the sanctity and worth of the individual. In the Book of Luke he makes it clear that to him individuals always take precedence over masses of men. The Reverend Mr. Cunningham says, "This is a fundamental principle at the heart of Christianity. It is basic in the democracy for which we now contend." St. Luke records that "when Christ at the end of a particular day was confronted with a great mass of the sick, 'He, laying His hand on every one of them, healed them.'" It was the individual with whom he was concerned rather than the mass. Without entering into any theologic discussions concerning whether or not Luke was actually a physician or actually the author of the portion of the New Testament accredited to him, he represents today the very embodiment of the highest type of physician. Those who would reduce human beings to a common entity, treat them without regard to individual humanity and spirituality, might well realize that the great majority of physicians today have learned the importance of the individual when his health and life are concerned and that that has come down to us through many hundreds of years.

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[1] "Health Activities Bulletin," Arizona Medical Society, September 1948, vol. 1, no. 1.

ORGANIZATION SECTION

Official Notes

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

November 28-29, 1948
St. Louis, Mo.

PROGRAM

SUNDAY, NOVEMBER 28

Missouri Room, Hotel Statler

8:30 a. m. Registration.

9:30 a. m. Call to Order. Dwight L. Wilbur, San Francisco, Chairman of Program Committee.

9:35 a. m. Purposes of the Conference. George F. Lull, Chicago, Secretary and General Manager, American Medical Association.

9:40 a. m. Address of Welcome. Roscoe L. Sensenich, South Bend, Ind., President, American Medical Association.

9:50 a. m. Symposium on Medical Legislation:

From the Point of View of the Board of Trustees of the American Medical Association. Edward J. McCormick, Toledo, Ohio.

From the Point of View of a State Association. Dwight H. Murray, Napa, Calif.

From the Point of View of a Congressman. Speaker to be announced.

11:00 a. m. Symposium on Osteopathy in Its Relationship to Medicine:

William H. Halley, Denver, Delegate to American Medical Association.

George W. Covey, Lincoln, Neb., Secretary, Nebraska Medical Examining Board.

Creighton Barker, New Haven, Conn., Secretary, Connecticut Medical Examining Board.

12 M. Recess for Luncheon.

1:30 p. m. Report on Cooperative Medical Advertising Bureau. Stanley B. Weld, Hartford, Conn., Chairman, Advisory Committee, Cooperative Medical Advertising Bureau, and Alfred J. Jackson, Chicago, Director, Cooperative Medical Advertising Bureau.

1:45 p. m. Announcements.

Round Table Conferences

Room 102, Hotel Statler, 2 p. m.

CONFERENCE ON MEDICAL SOCIETY RADIO PROGRAMS

Earl Whedon, Sheridan, Wyo., Associate Editor, *Rocky Mountain Medical Journal,* Moderator

Jonathan Forman, Columbus, Ohio, Editor, *Ohio State Medical Journal,* and John F. Conlin, Boston, Director of Public Information, Massachusetts Medical Society.

Missouri Room, Hotel Statler, 2 p. m.

CONFERENCE ON MEDICAL-HOSPITAL PREPAYMENT PLANS

Peter Pineo Chase, Providence, R. I., Editor, *Rhode Island Medical Journal,* Moderator

Indemnity Plans. Carll S. Mundy, Toledo, Ohio, Chairman, Executive Committee, Ohio Medical Indemnity, Inc.

Service Plans. Robert L. Novy, Detroit, President, Michigan Medical Service.

Cooperatives. Frank Elias, Duluth, Minn.

Room 104, Hotel Statler, 2 p. m.

CONFERENCE ON MEDICAL LEGISLATION

Charles Crownhart, Madison, Wis., Secretary, State Medical Society of Wisconsin, Moderator

Edward J. McCormick, Toledo, Ohio, and Dwight H. Murray, Napa, Calif., Trustees of American Medical Association, and a speaker to be announced.

Missouri Room

6:30 p. m. Dinner for Secretaries and Editors.

8:00 p. m. State Medical Journal Clinic.

Dwight L. Wilbur, San Francisco, Chairman of Program Committee, Presiding

Journals selected for discussion are *Arizona Medicine, The Pennsylvania Medical Journal, The Journal of the South Carolina Medical Association* and the *Texas State Journal of Medicine,* the editors of which have cooperated by authorizing the study and discussion of their publications for this Conference.

Format and Typography. John Lamoreoux, St. Louis, The Warwick Press.

Editorial Content. Edwin P. Jordan, Cleveland.

Advertising Format and Makeup. Harry C. Phibbs, Chicago, Harry C. Phibbs Advertising Company.

MONDAY, NOVEMBER 29

Missouri Room

10:00 a. m. Medical and Hospital Care Prepayment Plans. Paul R. Hawley, Chicago, Chief Executive Officer, Blue Shield-Blue Cross Commissions.

10:30 a. m. Medical Care of the Nation in the Event of Another War. James C. Sargent, Milwaukee, Chairman; Council on National Emergency Medical Service, American Medical Association.

Stafford L. Warren, Los Angeles, Dean, Medical School of University of California at Los Angeles and Radiological Chief Consultant at Bikini Atomic Bomb Tests.

11:00 a. m. Ten Minute Reports by Moderators of Sunday Afternoon Conferences.

11:30 a. m. General Discussion.

12:00 Noon. Adjournment.

SOUTH CENTRAL REGIONAL CONFERENCE

Mayo Hotel, Tulsa, Okla.

Saturday and Sunday, November 13 and 14

Sponsored by the A. M. A. Council on Medical Service and

Arkansas Medical Society
Kansas Medical Society
Louisiana State Medical Society
State Medical Association of Texas
Missouri State Medical Association
Oklahoma State Medical Association

Program

SATURDAY MORNING SESSION

9:30 a. m. *Registration*

James R. McVay, M.D., Kansas City, Mo., Council on Medical Service, American Medical Association, *Chairman*

Welcome

C. E. Northcutt, M.D., President, Oklahoma State Medical Association, Ponca City, Okla.

Why Get Together?

James R. McVay, M.D.

Roundtable Discussion—*What We Expect from the American Medical Association and the Council on Medical Service*

Moderator: George A. Schenewerk, M.D., Chairman, Committee on Public Relations, State Medical Association of Texas

Discussants: From each of the state associations (5 minutes each)

Open Question and Answer Period.

Luncheon

Medical Aspects in the Next National Emergency

James C. Sargent, M.D., Milwaukee, Chairman, Council on National Emergency Medical Service, American Medical Association

SATURDAY AFTERNOON SESSION

Roundtable Discussion—*Present Day Problems*

Moderator: J. D. McCarthy, M.D., Omaha, Council on Medical Service, American Medical Association

Medical School Influence on the Practice of Medicine

Discussant (15 minutes): Franklin D. Murphy, M.D., University of Kansas Medical Center, Kansas City, Kan.

Hospital Encroachment on the Practice of Medicine

Discussant (15 minutes): Daniel J. Murphy, M.D., New Orleans

Open Question and Answer Period

Roundtable Discussion—*The National Health Assembly*

(The discussion of the National Health Assembly will include "The Ewing Report")

Moderator: James Stevenson, M.D., Tulsa, Okla.

Conflict as to Methods of Rendering Medical and Hospital Service

Discussant (10 minutes): Thomas A. Hendricks, Chicago, Secretary, Council on Medical Service, American Medical Association

Effects on Future Legislation

Discussant (10 minutes): Joseph S. Lawrence, M.D., Washington, D. C., Director, Washington Office of the Council on Medical Service

Open Question and Answer Period

SATURDAY EVENING SESSION

Dinner

Wake Up, Doctor! Wake Up!

Mr. John I. Taylor, Mountain View, Okla., President, Oklahoma Farm Bureau Federation

SUNDAY MORNING SESSION

10:00 a. m. *Rural Health Symposium*

Moderator: Allen T. Stewart, M.D., Lubbock, Texas, Committee on Rural Medical Service, American Medical Association

What Does It Take to Provide Adequate Health Care?

Rural Medical Care—The Farmer's View

The Cooperative Hospital

Establishing Local Health Units

Organizing Local Health Councils

The Medical School and Rural Practice

Reports of State Association Rural Health Committees

SUMMARY OF LEGISLATION OF INTEREST TO PHYSICIANS ENACTED BETWEEN JULY 1, 1947 AND JUNE 30, 1948

PREPARED BY GEORGE E. HALL

Bureau of Legal Medicine and Legislation

The legislatures of nine states were in regular session during the period covered by this survey. Three or four additional states held special sessions. As is usual in the "off year" of state legislation, the number of proposals considered and laws enacted were relatively small. Only a few laws specifically concern the licensing of physicians, but medical schools, medical scholarships and medical research programs received legislative approval in various forms. Activity along the line of hospital survey and construction acts was continued and a number of other general surveys planned, e. g., a survey of the conduct of the board of naturopathic examiners in South Carolina, a survey of nonprofit hospital service corporations in Massachusetts and Virginia, a survey of mental hygiene at Sing Sing Prison and a survey of the problem of alcoholism in Virginia and South Carolina. Mississippi became the forty-eighth state to enact a workmen's compensation law. Most of the proposals of interest to the medical profession have previously been briefly referred to in The Journal at the time of their introduction, passage or enactment. This survey summarizes only those which successfully withstood the legislative processes and were enacted into law.

I. ALLIED PROFESSIONS AND SUNDRY VOCATIONS

Chiropody.—Bills relating to the practice of chiropody were enacted in Kentucky, Massachusetts and New York. Kentucky[1] created a board of examiners for chiropody and defined chiropody as the diagnosis and the local, medical, mechanical and surgical treatment of ailments of the human foot, and massage in connection therewith, except amputation of the foot or toes, the use of anesthetics other than local or the use of drugs or medicine other than local. The New York[2] law concerned itself with the definition of podiatry by providing as follows: A person practices podiatry who holds himself out as being able to diagnose ailments of the human feet by mechanical, chemical and physical means and/or as being able to practice minor surgery on the feet within the following limitations: the practice of minor surgery shall not permit operations on the bones, muscles or tendons of the feet or any other part of the body except operations for minor deformities of mechanical and functional nature, including the structures superficial to the deep fascia and including all structures of the terminal phalanges. It shall confer the right to treat for disease, pain, injury and deformity of the feet, and it shall not include any other part of the body. The treatment of fractures shall be limited to simple uncomplicated fractures of the phalanges and metatarsals. The use of anesthesia shall be limited to local anesthetics for therapeutic purposes as well as for anesthesia, and the right to use non-narcotic postoperative sedatives. The Massachusetts[3] law amended the chiropody act by setting forth the procedure by which a chiropody school may obtain board approval.

Cosmetology.—Louisiana[4] and Mississippi[5] created state boards of examiners for cosmetology and cosmetic therapy and defined such practice, the Louisiana definition including "also electrolysis by the use of electricity for cosmetic purposes and not for the treatment of any disease or the practice of surgery, or for the removal of any part of the skin or body except under medical supervision."

Dentistry.—Kentucky[6] and New Jersey[7] required persons desiring to practice as dental hygienists first to obtain licenses therefor from the dental examining board. The Kentucky law further required that the dental hygienist do his work under the continuous supervision and inspection of a licensed dentist

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1. Ky., Laws 1948, c. 176.
2. N. Y., Laws 1948, c. 361.
3. Mass., Laws 1948, c. 557.
4. La., Acts 1948, Act No. 211.
5. Miss., Laws 1948, c.——, approved April 13, introduced as H. 241.
6. Ky., Laws 1948, c. 6.
7. N. J., Laws 1948, c. 34.

and defined dental hygiene as the treatment of human teeth by removing therefrom calcareous deposits and by removing accumulated accretion from directly beneath the free margin of the gums and by polishing the exposed surface of the teeth and by making roentgenograms of teeth and surrounding tissues. An Alabama[8] law enacted last year, but too late to be included in the 1947 survey, provided for the creation and establishment of a four year school of dentistry in the state. Louisiana[9] provided that no member of the faculty or teaching staff of any university or college having a dental department in the state and no dentist owning stock or operating a dental supply business or commercial laboratory is eligible for appointment to the state board of dentistry. One Massachusetts[10] law provided that no corporation could conduct a dental office and that no person could conduct a dental office under any name other than that of the dentist actually owning the practice; another[11] increased the penalty for the illegal practice of dentistry. Mississippi[12] provided for gubernatorial appointments to the State Board of Dental Examiners from a list submitted by the Mississippi Dental Association. A Massachusetts[13] resolution provided for a survey of laws relating to the practice of dentistry by an unpaid commission to report back to the clerk of the house of representatives during December of 1948.

Nursing.—Louisiana,[14] New York[15] and Rhode Island[16] enacted laws providing for the licensing and regulating of practical nurses. The Louisiana law defined practical nursing as the performance of nursing services for patients, wherein the practical nurse is at all times under the supervision and direction of a licensed physician or a registered nurse acting under the supervision of a licensed physician. Two New York[17] laws authorized the licensing without examination of graduates of accredited nursing schools from other states under certain conditions. Three Mississippi[18] laws created scholarships for students of nursing. One[18a] of them authorized the establishment of a scholarship program for the advanced study of nursing to consist of forty scholarships of the value of not more than $3,000 each and provided that students accepting assistance from these scholarships be required to spend a period of time nursing in the state of Mississippi equal to the number of years during which they accepted the benefits of the scholarships. Another[18b] granted an appropriation to the board of trustees of state institutions of higher learning of $120,000 for the purpose of setting up scholarships for advanced studies in nursing. The third[18c] authorized the establishment of a school of nursing at the University of Mississippi and the inauguration of a scholarship program in connection therewith. Still another Mississippi[19] law amended the law relating to the Mississippi Commission on Hospital Care by, among other things, authorizing it to lay out a plan for building and equipping schools of nursing to be located in strategic points in the state for the promotion of the advancement of nursing education. A Virginia[20] law authorized the governing boards of the Medical College of Virginia and of the University of Virginia each to establish thirty-five nursing scholarships of the annual value of $100 each. A Massachusetts[21] law reduced the age limit of applicants for admission to nursing schools from 21 to 20 years. A Mississippi[22] law amended the Mississippi code relating to registered nurses by clarifying the powers and duties of the board of nurses' examiners. A Louisiana[23] law provided for the establishment and operation of a psychiatric training course for student nurses in the Central Louisiana State Hospital.

Optometry.—South Carolina[24] provided general amendments to the optometry act, including, among other things, a provision that no optometrist may use the title Doctor unless he has actually received a degree from a duly authorized college.

Pharmacy.—Massachusetts[25] authorized the Boston School of Pharmacy to issue the Bachelor of Science in Pharmacy degree after meeting certain requirements. Mississippi[26] prohibited the operation of any drugstore or pharmacy unless the owner or operator be, or shall have in his regular employ, a registered pharmacist or a licensed physician on duty. Mississippi[27] also required all persons licensed to practice pharmacy to renew their licenses annually. Louisiana[28] enacted a law regulating, defining and controlling the practice of pharmacy, and Virginia[29] enacted general amendments to the pharmacy law relating to the sale and inspection of drugs.

II. DISEASE CONTROL AND PUBLIC HEALTH MATTERS

General Public Health Programs.—Louisiana[30] provided an appropriation to the state board of health to prevent any decrease in the public health programs initiated within the state. South Carolina[31] enacted a resolution directing the executive committee of the Board of Health to make a careful investigation of the allocation of funds to the different counties for county health work and to adopt a plan which would distribute such funds equitably.

School Health Programs.—Louisiana,[32] Massachusetts,[33] Mississippi,[34] New York[35] and Virginia[36] enacted legislation designed to facilitate the operation of the National School Lunch Act. Mississippi[37] also provided an appropriation for assistance in carrying out a program of coordinated school, health and nutrition services in cooperation with the international health division of the Rockefeller Foundation and the general education board. A Massachusetts[38] law authorized the school committee of the city of Boston to make appropriations for organizing and conducting physical training and exercises, athletics, games and the like under the control of the committee and authorized the payment by insurance or otherwise of the reasonable hospital, medical and surgical expenses incurred by or in behalf of any student who sustains injuries while participating in any of the organized school athletics.

State Facilitcis for Tuberculosis Diagnosis and Control.—Kentucky[39] and Louisiana[40] created state tuberculosis sanatorium commissions in their respective states. Arizona[41] provided an appropriation to the state department of health to assist in remodeling buildings and in purchasing and installing surgical and x-ray equipment at the existing state tuberculosis sanatorium. New Jersey[42] and South Carolina[43] enacted laws authorizing the commitment to county hospitals or sanatoriums of persons who fail to obey rules and regulations concerning the prevention or spread of tuberculosis so as to restrain such persons from being a menace to their household or community. A New York[44] law amended the public health law by providing that no vaccine shall be used for the purpose of inducing immunity against tuberculosis unless it has been produced in accordance with regulations established or approved by the state commissioner of health.

Venereal Disease Appropriations for Eradication.—Two Mississippi[45] laws provided appropriations to defray the expenses of the state program for the eradication and control of syphilis and other venereal diseases. A third Mississippi[46] law provided an appropriation for the treatment of neurosyphilis and other diseases leading to insanity.

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[8] Ala.,Laws 1947, Gov. Act 625.
[9] La., Acts 1948, Act No. 303.
[10] Mass., Laws 1948, c. 270.
[11] Mass., Laws 1948, c. 123.
[12] Miss., Laws 1948, c.——, approved April 10, introduced as S. 450.
[13] Mass., Resolves 1948, c. 50.
[14] La., Acts 1948, Act No. 509.
[15] N. Y., Laws 1948, c. 385.
[16] R. I., Laws 1948, c. 2041.
[17] N. Y., Laws 1948, c. 439; c. 194.
[18] (*a*) Miss., Laws 1948, c.——, approved April 13, introduced as H. 290; (*b*) Miss., Laws 1948, c.——, approved April 14, introduced as H. 294; (*c*) Miss., Laws 1948, c.——, approved April 14, introduced as H. 291.
[19] Miss., Laws 1948, c.——, approved April 13, introduced as H. 532.
[20] Va., Laws 1948, c. 529.
[21] Mass., Laws 1948, c. 108.
[22] Miss., Laws 1948, c.——, approved April 13, introduced as H. 312.
[23] La., Acts 1948, Act No. 271.
[24] S. C., Acts 1948, Gov. Act No. 747.
[25] Mass., Laws 1948, c. 296.
[26] Miss., Laws 1948, c.——, approved April 10, introduced as S. 229.
[27] Miss., Laws 1948, c.——, approved April 13, introduced as S. 446.
[28] La., Acts 1948, Act No. 469.
[29] Va., Laws 1948, c. 41.
[30] La., Acts 1948, Act No. 79.
[31] S. C., Acts 1948, c.——, adopted April 1, introduced as S. 1559.
[32] La., Acts 1948, Act No. 44.
[33] Mass., Laws 1948, c. 548.
[34] Miss., Laws 1948, c.——, approved April 12, introduced as H. 1089.
[35] N. Y., Laws 1948, c. 511.
[36] Va., Laws 1948, c. 462.
[37] Miss., Laws 1948, c.——, approved April 9, introduced as H. 1047.
[38] Mass., Laws 1948, c. 334.
[39] Ky., Laws 1948, c. 190.
[40] La., Acts 1948, Act No. 25.
[41] Ariz., Laws 1948, c. 36.
[42] N. J., Laws 1948, c. 42.
[43] S. C., Acts 1948, Gov. Act No. 1058.
[44] N. Y., Laws 1948, c. 179.
[45] Miss., Laws 1948, c.——, approved February 17, introduced as H. 331; c.——, approved March 23, introduced as H. 717.

Miscellaneous.—Mississippi[47] required the state building commission to establish facilities for the treatment of alcoholics and narcotic addicts.

III. FOODS, DRUGS, COSMETICS AND THERAPEUTIC DEVICES

Aminopyrine, Sulfonamide Barbiturates and Other "Dangerous Drugs."—South Carolina[48] put sulfanilamide, sulfathiazole, sulfapyridine, sulfadiazine, aminopyrine, thyroid and other antifat preparations, together with any other drugs declared to be "dangerous drugs," on a prescription basis. Massachusetts[49] amended and reenacted the law relative to adulteration and misbranding of dangerous drugs by providing, among other things, that no person shall sell or offer for sale at retail any harmful drug other than to a physician, dentist or veterinarian, except on the written prescription of a physician, dentist or veterinarian. "Harmful drug" is defined by the act as including amidopyrine, amphetamine, desoxyephedrine, cantharides, cinchophen, digitalis, cinitrocresol, dinitrophenol, ergot, estrogen, barbituric acid, chloral hydrate, paraldehyde, thyroid, pituitary, croton oil, oil of pennyroyal, oil of savin, oil of tansy and any other drug deemed by the department of public health to be a harmful drug.

Narcotics.—Louisiana,[50] Massachusetts[51] and New Jersey[52] enacted amendments to the narcotic laws of those states. The Louisiana law added marijuana to the regulations covered by the narcotic drug act and also adds provisions relating to the definition and punishment of narcotic addicts. The Massachusetts law prohibited the refilling of prescriptions for narcotic drugs. The New Jersey law added amidone (methadone) to the definition of "narcotic drugs."

IV. HOSPITALS

State Hospital Construction Programs.—Alabama[53] and Kentucky[54] enacted hospital construction acts. The Alabama law enacted last year, but too late to be included in the 1947 survey, was for the purpose of providing funds to the State Board of Health for the planning and constructing of state-owned and other public and nonprofit hospitals in the state. The Kentucky law provided for the creation and establishment of a "Division of Medical Hospitals and related services" in the Department of Health to make a survey of hospital facilities throughout the state and to accept federal funds to assist in the construction of additional needed facilities. This law required the appointment of an advisory council and the preparation of necessary regulations and standards pertaining to the conduct and operation of hospitals constructed by virtue of the act. Another Kentucky[55] law more or less supplemented this act by creating a Kentucky Building Commission to have charge of buildings constructed throughout the state and by providing an appropriation to this commission to be used for matching funds for hospital construction under any law now existing or that may be passed by the national congress. Two Mississippi[56] laws amended the 1946 hospital survey and construction act. One[56a] included nonprofit hospitals and facilities among those organizations eligible for grants in aid; the other[56b] authorized the operation and equipping of health centers or health departments in the various municipalities of the state. Two other Mississippi[57] laws provided appropriations to the Mississippi Commission on Hospital Care for the purpose of building, erecting and equipping hospitals and other facilities in the state. New York[58] extended the life of the Joint Hospital Survey and Planning Commission to April 1, 1949, and provided for the submission by the commission of an interim report on or before April 1, 1948. Virginia[59] provided regulations for the operation of a hospital construction fund to accept and dispense funds for the state hospital construction program. Mississippi[60] authorized an appropriation of $1,500,000 for the construction and equipping of a teaching hospital in the School of Medicine of the University of Mississippi, and South Carolina[61] provided that the Medical College of South Carolina could participate in federal funds made available to assist it in financing the construction and equipment of a teaching hospital.

Hospital Districts.—Louisiana[62] authorized adjoining parishes to create hospital service districts to provide better hospital service therein.

Liability for Taxes.—An Alabama[63] law enacted last year but too late to be included in the 1947 survey, amended the law relating to exemptions from ad valorem taxes by adding to such exempt properties all property, real or personal, used exclusively for hospital purposes, to the amount of $20,000, where such hospitals maintain wards for charity patients and subject to a few other conditions.

Licensing Requirements.—Institutional licensing laws were enacted in a number of states. Wyoming[64] required all hospitals, nursing homes, sanatoriums and the like to obtain a license from the Department of Public Health and authorized such department to make the necessary rules and regulations relative thereto. A Mississippi[65] law, referring just to hospitals, provided for the appointment of an advisory hospital council to consult and advise with the licensing agency and to assist in the development of rules, regulations and standards to be required of the hospitals seeking licensure. This law further provided that no rules, regulations or standards shall be adopted or enforced which would have the effect of denying a license to a hospital or other institution required to be licensed hereunder, solely by reason of the school or system of practice employed or permitted to be employed therein. Rhode Island[66] made certain amendments to the existing hospital licensing law, among which was a definition of a hospital as "an institution for the lodging, care and treatment of persons suffering from disease or other abnormal physical or mental conditions." This law exempted convalescent homes from its operations and provided that no person could obtain medical or surgical treatment under false representations as to his financial condition from any hospital, outpatient department or dispensary licensed by the hospital licensing law. Massachusetts[67] and Rhode Island[68] provided for the licensing, regulating and inspecting of homes for aged or convalescent persons, the Massachusetts law also applying to hospitals and sanatoriums. South Carolina[69] amended the existing hospital licensing law by granting to institutions three years within which to comply with the rules, regulations and minimum standards provided for therein.

State Hospitals.—A Louisiana[70] concurrent resolution urged the superintendents of the state's general hospitals to make every possible effort to provide facilities for at least a limited number of chronically ill patients who may need hospitalization, surgery or other medical treatment and whose lives may be made more endurable by such treatment. Louisiana[71] also created a state hospital for the care and treatment of mentally ill persons.

V. REGULATION OF HEALING ARTS PRACTICE

Annual Registration.—Virginia[72] required the annual renewal of certificates to practice medicine, homeopathy, osteopathy, chiropractic, naturopathy or chiropody on or before June 30 of each year.

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[46] Miss., Laws 1948, c.——, approved March 23, introduced as H. 719.

[47] Miss., Laws 1948, c.——, approved March 23, introduced as H. 3.

[48] S. C., Acts 1948, Gov. Act No. 1156.

[49] Mass., Laws 1948, c. 598.

[50] La., Acts 1948, Act No. 416.

[51] Mass., Laws 1948, c. 473.

[52] N. J., Laws 1948, c. 125.

[53] Ala., Laws 1947, Gov. Act No. 484.

[54] Ky., Laws 1948, c. 189.

[55] Ky., Laws 1948, c. 237.

[56] (*a*) Miss., Laws 1948, c.——, approved February 18, introduced as H. 164; (*b*) Miss., Laws 1948, c.——, approved April 12, introduced as H. 533.

[57] Miss., Laws 1948, c.——, approved April 9, introduced as H. 818; c.——, approved April 9, introduced as H. 1008.

[58] N. Y., Laws 1948, c. 112.

[59] Va., Laws 1948, c. 399.

[60] Miss., Laws 1948, c.——, approved March 24, introduced as S. 356.

[61] S. C., Acts 1948, Gov. Act No. 1129.

[62] La., Acts 1948, Act No. 536.

[63] Ala., Laws 1947, Gov. Act 639.

[64] Wyo., Laws 1948, c.——, approved June 30, introduced as H. 6-X.

[65] Miss., Laws 1948, c.——, approved April 13, introduced as H. 687.

[66] R. I., Laws 1948, c. 2112.

[67] Mass., Laws 1948, c. 618.

[68] R. I., Laws 1948, c. 2111.

[69] S. C., Acts 1948, Gov. Act No. 935.

[70] La., Acts 1948, c.——, adopted June 1, introduced as S. Con. Res. 10.

[71] La., Acts 1948, Act No. 238.

[72] Va., Laws 1948, c. 491.

Corporate Practice.—Virginia[73] made it unlawful for any physician, dentist or optometrist to practice his profession as a lessee of any commercial or mercantile establishment or to advertise, either in person or through any commercial or mercantile establishment, that he is a duly registered practitioner and is practicing or will practice medicine, dentistry or optometry as a lessee of such commercial or mercantile establishment.

Psychologists.—Kentucky[74] provided for the creation of a board of examiners for the certification of clinical psychologists.

Exemptions from Medical Practice Acts.—New York[75] amended the education law by providing that after July 1, 1949, medical students performing clinical clerkships or similar functions in a legally incorporated hospital shall be exempt from the provisions of the medical practice act. Virginia[76] amended the medical practice act by, among other things, exempting therefrom interns and residents in legally established and licensed hospitals provided their practice is confined strictly to persons who are bona fide patients within the hospital or who receive treatment and advice in an organized outpatient department of the hospital to which ambulant patients regularly come for professional services rendered under supervision of licensed members of the hospital staff. The law also provided, however, that such interns and residents must have completed successfully the preliminary academic education required for admission to examinations given by the board in his particular field of practice or hold a valid license issued in a state maintaining standards acceptable for reciprocity with the state of Virginia. No graduate of a substandard medical school could be so employed except under particular cases.

Causes for Revocation of Licenses.—Massachusetts[77] amended its medical practice act by providing for the revocation of the certificate of registration of any physician guilty of the use of narcotic drugs in any way other than for therapeutic purposes. Virginia[78] amended the medical practice act by authorizing the state board of medical examiners to suspend or revoke the certificate of a physician who has been the legally responsible head of a hospital the license of which has been revoked because of illegal practice or conduct or practices detrimental to the welfare of a patient therein by the state board of health.

VI. RIGHTS AND PRIVILEGES, DUTIES AND LIABILITIES OF PRACTITIONERS

Special Privilege (Offices Which Must Be Held by Physicians).—Mississippi[79] amended the law relating to the procedure for committing persons to state mental institutions by providing that no person shall be admitted to a state mental institution except on a satisfactory report from two reputable licensed physicians. Another Mississippi[80] law provided that the executive officer of the state board of health shall be a physician versed in bacteriology, hygiene and sanitary science and otherwise fitted and equipped to execute the duties incumbent on him by law and who shall not engage in the practice of medicine.

Occupational Taxes.—A Virginia[81] law required every practicing medical doctor to obtain a revenue license; a Kentucky[82] law authorized certain class cities to provide license fees for the practice of any profession.

VII. MEDICAL AND HOSPITAL SERVICE PLANS, ETC.

Prepaid Hospital Care Plans.—Louisiana[83] declared businesses organized under the insurance laws and engaged exclusively in the business of furnishing hospital service, medical or surgical benefits to subscribers to be charitable and beneficial institutions and exempt from any form of taxation. Such institutions, however, must pay an annual license fee of $250.

Prepaid Medical Care Plans.—Mississippi[84] and South Carolina[85] enacted laws providing for the organization of medical service corporations. The Mississippi law was an enabling act for the organization and operation of nonprofit hospital, medical and surgical service corporations. The South Carolina law provided for the chartering and method of organization and operation of nonprofit medical service plans furnishing medical service by physicians at the expense of the corporation to subscribers to the plan. Medical service is defined to include all general and special medical services ordinarily provided by licensed physicians in accordance with the accepted practices of the community at the time the service is rendered. Physician is defined as any physician duly licensed to practice medicine in the state of South Carolina under the provisions of the medical practice act. Massachusetts[86] authorized medical service corporations to contract with hospital service corporations for the joint or cooperative administration of their affairs.

Accident and Sickness Insurance.—New Jersey[87] enacted a temporary disability benefits law.

Government Assistance to Municipal Employees and Indigents.—Mississippi[88] provided that certain municipalities in the state may pay out of the general fund of the municipality reasonable hospital and medical expenses of any member of the fire or police department on account of occupational diseases or accidents sustained by such member in the discharge of his duties. A Louisiana[89] concurrent resolution directed the Department of Institutions to take appropriate action to provide better hospital facilities for the indigent sick, to consider the installation of adequate free ambulance service and to consider the establishment in private hospitals of charity beds on a contractual basis. A Louisiana[90] law provided an appropriation to the Department of Institutions for the purpose of purchasing ambulances, maintaining adequate free ambulance service for state hospitals and paying for charity beds in rural areas for the hospitalization of indigents. Another Louisiana[91] law resulted in the creation of a state hospital board to contract or enter into agreements with privately owned hospitals and other institutions for the care and treatment of indigent or destitute sick persons. At least two members of the board must be capable and reputable physicians engaged in the general practice of medicine in the state. New Jersey[92] authorized municipalities having no municipal hospital to make appropriations each year to be applied to the purpose of paying the cost of supporting and maintaining indigent patients in hospitals in the municipality supported by private charity.

Miscellaneous.—Massachusetts[93] authorized the commissioner of the state police to pay the reasonable hospital, medical and surgical expenses incurred by any officer disabled while on duty.

VIII. WORKMEN'S COMPENSATION AND OCCUPATIONAL DISEASE LEGISLATION

Occupational Diseases.—Virginia[94] amended the occupational disease law by including pneumoconiosis within the list of occupational diseases covered by the act.

Extent of Medical, Hospital, Dental and Other Care.—Massachusetts[95] provided that medical services shall be made available to an injured employee as long as they are necessary, regardless of the fact that maximum compensation under other sections of the law might have been paid.

Miscellaneous (Completely New Acts, etc.).—Mississippi[96] enacted a new workmen's compensation law for the state, the forty-eighth state to enact such legislation. It provided for compulsory coverage, unlimited medical care, second injury fund and double compensation for minors injured while illegally employed.

MISCELLANEOUS LEGISLATION

Ambulance Calls.—Louisiana[97] provided regulations for the selling of ambulance insurance policies. Massachusetts[98] provided for the exemption from the requirements of the compulsory motor vehicle liability insurance law of ambulances owned and operated by hospitals or other institutions supported wholly or in part by public or private donations for charitable purposes.

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[73] Va., Laws 1948, c. 205.
[74] Ky., Laws 1948, c. 169.
[75] N. Y., Laws 1948, c. 438.
[76] Va., Laws 1948, c. 68.
[77] Mass., Laws 1948, c. 28.
[78] Va., Laws 1948, c. 531.
[79] Miss., Laws 1948, c.——, approved March 23, introduced as H. 5.
[80] Miss., Laws 1948, c.——, approved April 10, introduced as H. 554.
[81] Va., Laws 1948, c. 433.
[82] Ky., Laws 1948, c. 144.
[83] La., Acts 1948, Act No. 383.
[84] Miss., Laws 1948, c.——, approved April 14, introduced as S. 453.
[85] S. C., Acts 1948, Gov. Act. No. 892.
[86] Mass., Laws 1948, c. 359.
[87] N. J., Laws 1948, c. 110.
[88] Miss., Laws 1948, c.——, approved April 14, introduced as S. 332.
[89] La., Acts 1948, c.——, adopted May 20, introduced as S. Con. Res. 4.
[90] La., Acts 1948, Act No. 171.
[91] La., Acts 1948, Act No. 22.
[92] N. J., Laws 1948, c. 53.
[93] Mass., Laws 1948, c. 318.
[94] Va., Laws 1948, c. 244.
[95] Mass., Laws 1948, c. 159.
[96] Miss., Laws 1948, c.——, approved April 13, introduced as H. 351.
[97] La., Acts 1948, Act No. 458.
[98] Mass., Laws 1948, c. 572.

Animal Experimentation.—A Kentucky[82] law relating to license taxes in certain cities in the state, authorized the board of aldermen to provide license fees for the using, holding or exhibiting of any animal. Massachusetts[99] provided for the creation of a special commission to consider the advisability of licensing institutions capable of intelligent experimentation and of providing for supplying to licensed institutions unclaimed and unwanted animals which are held in public pounds. This commission is to investigate relative to the procurement and treatment of animals for medical experimentation and study.

Anti-Discrimination.—A number of proposals were considered in the legislatures which were intended to prohibit or prevent certain types of discrimination in connection with medical and hospital practice, but only two of these proposals were finally enacted. A Kentucky[100] law, relating to the training of Negro nurses and doctors, provided that any hospital may give instruction in nursing, medicine, surgery or other related courses of graduate grade or on the professional level, to Negroes if the governing body of the hospital, by a majority vote of its members, so elects. A New York[101] law amended the education law in relation to complaints against educational institutions for alleged discrimination in the admission of applicants.

Blood Plasma.—New York[102] amended the law relating to persons, firms and corporations procuring blood donors so as to eliminate the requirement that donors present a satisfactory physical examination certificate showing freedom from communicable disease.

Clinics and Dispensaries; Regulation.—Louisiana[103] provided an appropriation to the Louisiana State Board of Health to be used to match federal and local funds to provide for the construction and equipping of public health centers, including administrative offices, laboratories and clinics. Massachusetts[104] authorized the construction of a Springfield Municipal Hospital for the reception of persons having diseases dangerous to the public health, as a tuberculosis dispensary, as a hospital for the chronic sick, as a dental, medical and health clinic and as an infirmary for persons in need.

Departments or Boards of Health.—An Arizona[105] law created the office of director of the State Department of Public Health and set forth the eligibility requirements thereof, among which requirements are that the applicant must be a reputable physician licensed to practice in Arizona and a graduate of a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association. A Massachusetts[106] law increased the scope of the survey and study by the special commission studying and revising the laws relating to public welfare.

Divorce.—New York[107] amended the domestic relations law by providing that in actions to annul a marriage on the ground of insanity, the testimony of a physician attached to a state hospital in the department of mental hygiene who attended the patient in a professional capacity at such hospital, shall be taken.

Health Centers.—Missouri[108] authorized counties to levy a tax for the purpose of operating or maintaining public county health centers or institutions therein. A Virginia[109] law authorized the appropriation by certain municipalities of funds for the operation and maintenance of hospitals or health centers.

Medical Research Programs.—Kentucky[110] provided for the creation of a medical research commission to inaugurate a program of research in the fields of medicine, surgery and allied sciences, preventive medicine, control of diseases and all other features of medicine and surgery that affect the health and welfare of the people of the state. Massachusetts[111] enacted a resolution memorializing the Congress to enact legislation providing for the establishment of a National Science Foundation with the appropriation of sufficient funds to encourage scientific research to be conducted which shall be made available to the directors of the armed forces and insure national security in the future.

Medical Schools and Scholarships.—Massachusetts, New York, South Carolina and Virginia enacted legislation pertaining to medical education. Massachusetts[112] provided for the inspection of colleges, universities and medical schools approved for the purpose of medical education and for the withdrawal of such approval in certain instances. One New York[113] law provided for the merger and consolidation into New York University of New York corporations authorized to establish, maintain or operate any hospital, infirmary, dispensary or clinic; another[114] provided for the establishment of a state university and directed such state university to formulate plans and make recommendations for the establishment of two health and medical centers as a part thereof. South Carolina[115] authorized the acquisition of land for a site for a teaching hospital in the city of Charleston for use by the Medical College of South Carolina. The Virginia[116] law resulted in the creation of a committee to study medical education in general in the state and the relation of medical education to the services that it renders to the people. A New York[117] law amended a recent law providing for the creation of a state university by, among other things, authorizing state aid to medical schools, research centers and similar institutions or facilities operating specified training or research programs or projects pursuant to contracts with the state university. Another New York[118] law amended a previous law creating a temporary state commission to examine into the need for the creation of another state university by requiring such commission to make a report to the governor on or before May 1, 1948. A South Carolina[119] law is a joint resolution giving legislative approval to a compact entered into by the states of South Carolina, Georgia, Florida, Alabama, Tennessee and other Southern states relative to the planning, acquisition, establishment and maintenance of jointly owned and operated regional educational institutions, among which is the Meharry Medical College of Nashville, Tenn. Mississippi,[120] South Carolina[121] and Virginia[122] enacted laws relating to medical or nursing scholarships. The Mississippi law provided for the appropriation of $510,000 to the state medical education board for the purpose of carrying out the provisions of the existing law relating to medical scholarships and loans. South Carolina provided for the establishment of eight scholarships at the Medical College of the State of South Carolina of the value of $75 per month plus tuition, conditioned on the recipient doing private general medical practice during one calendar year for each year of the scholarship in some rural community in the state designated by the State Board of Health. Virginia provided amendments to and reenactments of the law setting up annual medical scholarships at the Medical College of Virginia and the University of Virginia.

Mental Health Acts.—Rhode Island[123] provided for an act to extend and strengthen the mental health services in the state and designated the State Department of Social Welfare as the agency to cooperate with the federal government in this regard.

Physical Examinations.—Louisiana[124] prohibited employers from charging employees and job applicants for medical examinations or records when required by the employer as a condition of employment. Two Alabama[125] laws were enacted in 1947,

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99. Mass., Resolves 1948, c. 76.
100. Ky., Laws 1948, c. 112.
101. N. Y., Laws 1948, c. 753.
102. N. Y., Laws 1948, c. 729.
103. La., Acts 1948, Act No. 492.
104. Mass., Laws 1948, c. 455.
105. Ariz., Laws 1948, c. 43.
106. Mass., Resolves 1948, c. 83.
107. N. Y., Laws 1948, c. 362.
108. Mo., Laws 1948, c.——, approved May 10, introduced as H. 482.
109. Va., Laws 1948, c. 266.
110. Ky., Laws 1948, c. 160.
111. Mass., Laws 1948, c.——, adopted February 19, introduced as H. 934.
112. Mass., Laws 1948, c. 413.
113. N. Y., Laws 1948, c. 789.
114. N. Y., Laws 1948, c. 695.
115. S. C., Acts 1948, Gov. Act No. 798.
116. Va., Laws 1948, c.——, adopted March 11, introduced as S.J.R. 27.
117. N. Y., Laws 1948, c. 698.
118. N. Y., Laws 1948, c. 5.
119. S. C., Acts 1948, Gov. Act No. 846.
120. Miss., Laws 1948, c.——, approved March 23, introduced as H. 386.
121. S. C., Acts 1948. Gov. Act No. 1116.
122. Va., Laws 1948, c. 528.
123. R. I., Laws 1948, c. 2113.
124. La., Acts 1948, Act No. 281.
125. (*a*) Ala., Laws 1947, Gov. Act 209; (*b*) Ala., Laws 1947, Gov. Act 247.

but too late to be included in the 1947 survey. One [125a] of them amended the law relating to blood testing for syphilis by providing that every person between the ages of 14 and 50 residing or living in the state shall have his blood examined for syphilis by an approved laboratory test at such time as shall be designated by the State Board of Health. The other [125b] required that all persons between the ages of 13 and 50 residing in the state have physical and roentgenographic examinations or be otherwise tested for tuberculosis during such periods or at such times as may be designated by the State Board of Health. This law further provided that if one member of a family shows a positive reaction to the test all other members of that family regardless of age shall be subject to the examination. Rhode Island [126] authorized every superintendent of schools to cause such further examinations to be made of school children as he shall deem necessary for the purpose of guarding against any further outbreaks of infantile paralysis within the schools of any city or town. Such examinations could include examinations of the legs and pedal extremities of such children by physicians, school nurses or persons qualified to make such examinations. New York [127] amended the law relating to the state athletic commission by creating in such commission a medical advisory board to prepare and submit to the commission for approval regulations and standards for the physical examination of professional boxers and wrestlers.

Surveys.—South Carolina [128] directed the Board of Naturopathic Examiners of the state to undertake immediately a study of the various licenses and personal qualifications of applicants heretofore licensed to practice naturopathy in the state and the propriety of cancelling any licenses erroneously obtained. The board was further directed to cancel immediately any licenses of licensees to practice naturopathy if the board in its discretion decided that the license should be cancelled for any reason, and in checking the qualifications of the licensees the board should take into consideration the information developed by the Law Enforcement Division of the state of South Carolina and such other information as the Law Enforcement Division may be able to obtain with reference thereto. The Board of Naturopathic Examiners was directed to submit to the General Assembly of South Carolina in 1949 a full and complete written report concerning the matter. A New York [129] resolution continued the special joint legislative committee making a survey and study of the social, educational and physical problems of persons afflicted with cerebral palsy. Louisiana [130] provided for the appointment of a commission to develop the facts and figures in relation to and a program for the rehabilitation of alcoholics. South Carolina [131] established a special committee for the purpose of studying and making an investigation into the need and feasibility of establishing an institution, either separately or in connection with any existing state institution, for the purpose of treating chronic alcoholics. Virginia [132] created within the Department of Health a division of alcohol studies and rehabilitation for the study of the problems of alcoholism, the treatment and rehabilitation of persons addicted to the excessive use of alcoholic beverages and the promotion of preventive and educational programs. Massachusetts [133] created a special commission to make a study of the subject of nonprofit hospital service corporations. Virginia [134] directed its advisory legislative council to make a thorough study of the methods and practices of corporations and associations engaged in furnishing hospital and medical service on the prepayment plan. Arizona [135] enacted a hospital survey and construction act for the purpose of conducting a survey of existing hospital facilities and a construction program for the building of additional needed facilities. The law provides for the appointment of an advisory survey and construction council, one member of which shall be chosen from a panel of four submitted by the Arizona medical association and another member of which shall be chosen from a panel of four submitted by the Arizona society of osteopathic physicians and surgeons. Louisiana [136] granted an appropriation to the state hospital board for conducting a hospital survey and construction program and a mental health program in the state of Louisiana. Michigan [137] amended the existing hospital survey and construction act by providing that any hospital receiving federal aid under the federal hospital survey and construction act shall comply with the minimum standards of maintenance and operation which the State Department of Public Health with the advice of the advisory hospital council shall promulgate. A Louisiana [138] resolution directed the Committee on Charitable Institutions to visit any and all of the charitable and eleemosynary institutions in the state and to make any necessary recommendations which it deems appropriate. A Louisiana [139] law resulted in the enactment of a Louisiana Health and Hospital Planning Act. This act authorized the State Hospital Board to adopt a construction program within the state and to prescribe minimum standards of maintenance and operation of hospitals which receive state or federal aid. It also required the appointment of a state advisory council and the adoption of a state mental health plan in cooperation with the national mental health act. New Jersey [140] created a commission to make a survey of all voluntary charitable hospitals throughout the state to determine what steps can be taken to relieve existing overcrowding and to furnish additional revenue for operating costs to relieve the burden now being carried by the voluntary charitable hospitals. A Massachusetts [141] law required the committee on insurance to make an investigation of the desirability or necessity of revising, recodifying and recommending any changes in and additions or amendments to the laws relating to group life insurance and group accident and health insurance. Another Massachusetts [142] law provided for a special commission to study and investigate relative to preventable diseases and to the establishment of full time local health units throughout the commonwealth. New York [143] created a commission to make a study of correction and mental hygiene at Sing Sing prison to develop information as to the underlying causes of sex crimes and the development of treatment for persons committing such crimes.

Miscellaneous.—An Alabama [144] law enacted in 1947, but too late to be included in the 1947 survey, amended the law relating to the state income taxes by authorizing individual income taxpayers a deduction of expenses paid during the taxable year, not compensated for by insurance or otherwise, for medical care of the taxpayer, his spouse or his dependents to the extent that such expense exceeds 5 per cent of the gross income of the taxpayer. A Maryland [145] law exempted from the retail sales tax act the sales of crutches, artificial limbs, artificial eyes, artificial hearing devices and corrective eyeglasses, when they are designed to be worn on the person of the owner or user, and the sales of orthopedic appliances and wheelchairs. Mississippi [146] authorized the incorporation of organizations for medical and surgical purposes or for establishing, maintaining and operating clinical, pathologic, medical or surgical research laboratories or the like. South Carolina [147] authorized any department, commission, board or officer of the state to have microfilms made of any part of its records and provides that microphotographs or microphotostatic copies of such records may be introduced in evidence in any court of law in the state to the same extent as the original records would have been. A Virginia [148] law named the State Corporation Commission as an agency to require reports, estimates, facts and other data from those agencies operating on a statewide basis that exist primarily for the solicitation of funds from the public for medical care or medical research.

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[126] R. I., Laws 1948, c. 2103.
[127] N. Y., Laws 1948, c. 754.
[128] S. C., Acts 1948, c.——, adopted April 10, introduced as H. 1413.
[129] N. Y., Laws 1948, c.——, adopted March 8, introduced as C.C.H.A. Res. 161.
[130] La., Acts 1948, Act No. 318.
[131] S. C., Acts 1948, c.——, adopted April 10, introduced as H. 1803.
[132] Va., Laws 1948, c. 544.
[133] Mass., Resolves 1948, c. 95.
[134] Va., Laws 1948, c.——, adopted March 13, introduced as H.J.R. 41.
[135] Ariz., Laws 1948, c. 33.
[136] La., Acts 1948, Act No. 183.
[137] Mich., Acts 1948, *Public Act 14.*
[138] La., Acts 1948, c.——, adopted May 21, introduced as H. Res. 6.
[139] La., Acts 1948, Act No. 65.
[140] N. J., Laws 1948, J.Res.c. 3.
[141] Mass., Laws 1948, c.——, adopted June 14, introduced as H. 2377.
[142] Mass., Resolves 1948, c. 78.
[143] N. Y., Laws 1948, c. 609.
[144] Ala., Laws 1947, Gov. Act 693.
[145] Md., Laws 1948, c. 54.
[146] Miss., Laws 1948, c.——, approved April 13, introduced as H. 282.
[147] S. C., Acts 1948, Gov. Act No. 1193.
[148] Va., Laws 1948, c. 403.

Washington Letter

(From a Special Correspondent)

Nov. 3, 1948.

Committee on Growth Re-Formed

Dr. Milton C. Winternitz, professor of pathology at Yale University School of Medicine, has been appointed chairman of the Committee on Growth, National Research Council (Division of Medical Sciences). He succeeds Dr. C. P. Rhoads, director of Memorial Hospital (New York City), who remains a member of the committee. As reconstituted for 1948-1949, the Committee on Growth has added several experts to its various scientific panels, and two of its six sections have new chairmen. They are Dr. Arnold D. Welch, Western Reserve University School of Medicine, for chemotherapy, and Dr. Willard M. Allen, Washington University School of Medicine, for clinical investigations. They succeed Drs. Perrin H. Long (Johns Hopkins) and Allan T. Kenyon (University of Chicago), respectively.

American Legion Publishes "Medical Advisors Manual"

Just published by American Legion offices in Washington is the "Medical Advisors Manual," a 96 page booklet designed to guide and aid physicians who are concerned with veterans' medical problems. It includes special articles by Drs. Charles W. Mayo ("Medical Education"), Winfred Overholser ("Post War Trends in Psychiatry"), Howard A. Rusk ("Medical Rehabilitation"), Waltman Walters and John V. Triolo ("War and Post War Surgery") and C. Raymond Wells ("Dentistry").

In the booklet's introduction, Dr. Leonard G. Rowntree, chairman of the Legion's National Medical Advisory Board, writes: "With its nationwide network of medical advisors, the American Legion is in a better position than ever before to become the champion of the health of the people and to elevate the national health to a higher plane than ever in the past. As medical advisors to the American Legion, it is our bounden duty to keep the medical service for the veteran at its peak and also to aid the American Legion, and the American Medical Association, in their national campaign for improvement in physical and mental health."

Nuclear Science Abstracts

Schools, hospitals, laboratories and other institutions interested in atomic medicine should take note of the fact that the publication *Atomic Energy in Biophysics, Biology and Medicine* has been succeeded by a semimonthly special edition of *Nuclear Science Abstracts,* also published by Atomic Energy Commission. First issue (vol. 1, no. 6) of the new publication made its appearance earlier this month, carrying such subject categories as Biological Effects of Radiation, Health Protection, Radiotherapy and Tracer Applications. The volume, and those which will follow at semimonthly intervals, contains abstracts of declassified AEC reports and articles pertaining to atomic energy which have been published in domestic and foreign literature.

Nuclear Science Abstracts, as well as AEC declassified documents, are available for sale by Document Sales Agency, P. O. Box 62, Oak Ridge, Tenn.

Medical Advisers Seek Over-All National Health Policy

National Security Resources Board, in a statement issued following the first meeting of its medical advisory committee on September 25, announced that NSRB Chairman Arthur M. Hill had been urged by the group to assume administration of "an over-all national health policy." Both military and civilian medical problems, with particular reference to situations that might arise in event of war, were discussed by the advisory group, whose chairman is Dr. James A. Crabtree, director of the board's medical division. Members of the committee are Drs. William P. Shepard, San Francisco; A. C. Bachmeyer, Chicago; James C. Sargent, Milwaukee; Edward L. Bortz, Philadelphia; Michael E. DeBakey, New Orleans, and Percy T. Phillips, New York.

Professional Leaders Invited to Military

Representatives of American medicine are expected to be among the professional, clerical, labor, educational, press and industrial leaders who will attend an unusual conference, announced by Secretary of Defense James Forrestal, scheduled to open in the Capital November 8. Its purpose will be to familiarize the public with attainments of the military establishment since Army, Navy and Air Force were integrated last year under Secretary Forrestal. From November 8 to 12, the conferees will meet in closed sessions to hear addresses by him, the three Department Secretaries and top ranking officials, both military and civilian, of the National Military Establishment. Then they will be flown to observe two day field demonstrations by Army, Navy and Air Force. These will be conducted, respectively, at Fort Benning, Ga., and the Pensacola and Eglin air bases in Florida.

International Medical Conferences

The year 1948, which has been the biggest postwar year for international conferences, will witness several important medical gatherings during its last quarter, according to a list compiled by the Department of State. Earlier this month conferences of the Pan American Sanitary Organization opened in Mexico City, coincident with the sixth meeting of health directors of the twenty-one American Republics. On October 15 the World Health Organization's Expert Committee on Venereal Disease will convene in Paris. The Fifth Inter-American Congress of Surgery opens in La Paz, Bolivia, October 17. Eight days later the executive board of World Health Organization will meet in Geneva. November conferences include the Second Inter-American Congress on Brucellosis at Mendoza, Argentina. December 1-8 will witness the First Pan American Congress of Pharmacy at Havana, Cuba.

Coming Medical Meetings

American Medical Association Interim Session, St. Louis, Municipal Auditorium, Nov. 30-Dec. 3. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Annual Conference of State Secretaries and Editors, St. Louis, Hotel Statler, Nov. 28-29. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

National Medical Public Relations Conference, St. Louis, Hotel Statler, Nov. 27. Mr. Lawrence W. Rember, 535 N. Dearborn St., Chicago 10, Director.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 5-9. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, Secretary.

American Academy of Pediatrics, Atlantic City, Chalfonte-Haddon Hall, Nov. 20-23. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 21-23. Dr. Raymond B. Kepner, 547 W. Jackson Blvd., Chicago 6, Secretary.

American Clinical and Climatological Association, Hot Springs, Va., The Homestead, Nov. 8-10. Dr. James Bordley III, Bassett Hospital, Cooperstown, N. Y., Secretary.

American Public Health Association, Boston, Nov. 8-12. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

Association for Research in Nervous and Mental Diseases, New York, Waldorf-Astoria Hotel, Dec. 10-11. Dr. Clarence C. Hare, 700 W. 168th St., New York 32, Secretary.

Association of Military Surgeons of the United States, San Antonio, Texas, Nov. 11-13. Dr. James M. Phalen, Army Institute of Pathology, Washington 25, D. C., Secretary.

Eastern Section, American Federation for Clinical Research, Philadelphia, Temple University School of Medicine, Dec. 4. Dr. J. Edward Berk, Temple University School of Medicine, Philadelphia, Chairman.

International College of Surgeons, U. S. Chapter, St. Louis, Kiel Auditorium, Nov. 16-19. Mr. Ralph E. Osborne, 1516 Lake Shore Drive, Chicago, Business Secretary.

Inter-State Postgraduate Medical Association of North America, International Medical Assembly, Cleveland, Public Auditorium, Nov. 9-12. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 10-12. Dr. J. Basora Defillo, Box 3866, Santurce, Secretary.

Radiological Society of North America, San Francisco, Dec. 5-10. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, Dallas, Texas, Hotel Adolphus, Dec. 6-7. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 7-9. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, St. Louis, Dec. 2-4. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

NAVY

PERSONALS

The Bureau of Medicine and Surgery announces the retirement of Captain Frederick L. McDaniel, director of the professional division of the Bureau of Medicine and Surgery, after more than thirty years' service.

Captain Frank M. Cannon, San Rafael, Calif., of the Medical Reserve Corps has volunteered for recall to active duty and will be assigned to the Naval Dispensary, San Francisco.

Commander Thomas F. Dowd, of Philadelphia, of the Medical Reserve Corps has been recalled to active duty and ordered to postgraduate instruction under the new Navy Graduate Medical Training Program for a residency in obstetrics and gynecology at the Naval Hospital, Philadelphia.

Lieut. Comdr. Frederick B Carlson, Ashtabula, Ohio, on inactive reserve status, has been commissioned in the Medical Corps of the Regular Navy.

Lieutenant Marcus L. Howard, Dawsonville, Texas, has been recalled to active duty at his own request from an inactive status in the Reserve Corps.

Lieutenant (jg) James B. Smith, MCR, New York, has reported to the Naval Hospital, San Diego, Calif., for his first active duty.

Commander F. X. Banvard, MC, Retired, Baltimore, has volunteered for recall to active duty and will be assigned to the Naval Gun Factory, Washington, D. C.

The following Medical Reserve Corps officers have reported for their first active duty for postgraduate instruction under the new Graduate Medical Training Program: Lieutenants (jg) James B. Flanagan, Tyler, Texas, residency in internal medicine at John Gaston Hospital, Memphis, Tenn.; James H. Wells, Springfield, Mo., residence in neuropsychiatry at Indianapolis General Hospital, Indianapolis.

AWARDS AND COMMENDATIONS

Captain Herbert G. Shepler

In a ceremony in the Office of the Surgeon General October 11, Rear Admiral C. A. Swanson, in behalf of the Commander-in-Chief of the United States Pacific Fleet, presented a letter of commendation to Captain Herbert G. Shepler, M.C. The citation read as follows:

For meritorious conduct in the performance of his duties as senior medical officer on the U. S. S. *Hancock* during operations against the enemy from Oct. 10, 1944, to Aug. 15, 1945. His resourcefulness in handling large numbers of casualties resulting from enemy action contributed materially to the ability of his ship to continue offensive operations against the enemy. His leadership and skilful training of his men provided a highly effective medical organization which greatly enhanced the fighting effectiveness of his ship. His performance of duty was outstanding and his conduct was at all times in keeping with the highest traditions of the United States Naval Service.

Dr. Shepler was graduated from Ohio State University College of Medicine and entered the medical corps of the Navy June 25, 1929.

PUBLIC HEALTH SERVICE

FIRST PUBLIC HEALTH ATTACHÉ APPOINTED

Dr. Morris B. Sanders has been appointed as the first Public Health Attaché to represent the United States abroad. Dr. Sanders has been assigned to the embassies at Paris, Brussels and The Hague, with residence in Paris. Among his duties will be the collection of information from those countries on health, medical research, prevalence of diseases of interest to the United States and the extent of health insurance in their programs; familiarizing himself with the administration and technic in the national public health services abroad, and identifying himself with the public health and medical research of the countries to which he is assigned.

Dr. Sanders, a graduate of Harvard Medical School, has since 1932 worked in France, serving on the staff of the American Hospital in Paris, chiefly in the field of anesthesia. He joined the U. S. Public Health Service reserve as medical director May 24, 1948, on which day he was detailed to the State Department. During the war he was anesthetist for the American Hospital, used as a French Auxiliary Hospital, and was a member of the Commission for Oxygen Therapy for the French Armies under Dr. Alexis Carrel. He was held in a German concentration camp from December 1941 until April 1942, and when released returned to work as an anesthetist at the French Red Cross.

NATIONAL INSTITUTE OF DENTAL RESEARCH

Under the authority of an Act of Congress the Federal Security Administrator has announced the establishment of the National Institute of Dental Research, which will conduct a broad attack on dental diseases and related diseases of the mouth. Congress has authorized appropriations of $750,000 a year for this program, which will include research in the Institute's laboratories at Bethesda, Md.; financial grants to outside institutions for research and training of professional personnel and fellowships and traineeships in the Institute to promote training and research in dental diseases. The director of the new Institute will be H. Trendley Dean, D.D.S., who has been Director of the Dental Research Section of the National Institutes of Health of the Public Health Service.

MISCELLANEOUS

TWO NEW ISOTOPES FOR RESEARCH

Limited quantities of two important new research materials—hydrogen-3 and helium-3—have been added to the list of isotopes being distributed by the United States Atomic Energy Commission to scientists and research institutions throughout the United States, it was announced by the Atomic Energy Commission. Hydrogen-3, also called tritium, is a radioactive gas with a half-life of about twelve years. As the only radioisotope of hydrogen, it should prove of special value as a "tracer" in medical, biologic and chemical research. When combined with oxygen, tritium can also be used as the valuable research tool known as heavy heavy-water. Helium-3, a stable isotope, is only one-millionth as abundant in nature as ordinary helium. Now that it is available for laboratory study, it may provide valuable clues to the still largely unknown properties of the helium nucleus. Because of the extreme simplicity of their atomic nuclei, both materials are readily adaptable to investigations in support of basic atomic theory. Already, important knowledge of the fundamental forces which hold the atomic nucleus together has been gained in experiments with tritium and helium-3 by Dr. Herbert Anderson and Dr. Aaron Novick at the Atomic Energy Commission's Argonne National Laboratory, Chicago, where the new isotopes are produced.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Art Exhibit.—The first postwar exhibit of the Los Angeles Physicians' Art Society will be held November 15-30 in the lounge of the Los Angeles County Medical Association. Paintings, sculptures, pottery, photographs and other works of art should be received at the association not later than November 12. The awards will be presented on the evening of November 19.

CONNECTICUT

Society News.—At the recent meeting of the Connecticut Cancer Society at Waterbury, Dr. Creighton Barker, New Haven, executive secretary of the Connecticut State Medical Society, was elected president, and Dr. Alfred L. Burgdorf, Hartford, was made chairman of the medical advisory committee.

Rheumatic Fever and Cardiac Program.—The Rheumatic Fever and Cardiac Program of New Haven begins its second year with an expanded program to combat heart disease. A cardiac registry of 900 New Haven school children to be examined has been compiled by the bureau of nursing of the New Haven Department of Health. These school children are to be examined and referred to private physicians for follow-up or to the clinic facilities. The New Haven Rheumatic Fever and Cardiac Program was established a year ago by the Connecticut State Department of Health, Department of Pediatrics, Yale University School of Medicine, and the City Health Department (The Journal, Oct. 11, 1947, p. 363).

FLORIDA

Personal.—Dr. T. Elam Cato, Miami Beach, director of the Dade County Health Department, was recently elected president of the Florida Public Health Association.

Blood Bank and Research Foundation.—The building housing the Dade County Blood Bank and its Medical Research Foundation was dedicated on Labor Day in Miami. The blood bank is designed to provide for the collection of as much as 400 bottles of blood a day in an emergency. Research in bacteriology, biochemistry, immunology and hematology will be carried out in the new research building. Both the blood bank and the foundation are sponsored by the Dade County Medical Association, and their direction will be under the control of technical committees drawn from its membership.

ILLINOIS

Personal.—Dr. William L. McNamara, Hines, has been appointed full time director of the pathology department of Memorial Hospital, Elmhurst, Ill. Dr. McNamara is assistant professor of pathology at Northwestern University Medical School.

Conference at Rockford.—A graduate Conference for the First Councilor District of the Illinois State Medical Society will be held at the Hotel Faust, Rockford, November 10, 2 p. m., under the auspices of the state society. Chicago physicians participating are:

Henry G. Poncher, Therapy in Infancy and Childhood.
Ralph B. Bettman, Intrathoracic Surgery.
Paul S. Rhoads, Inhalation of Penicillin Dust.
Percy E. Hopkins, Voluntary Prepayment Medical Care.

Dr. Percival Bailey, Chicago, will speak at the dinner on "Japanese B. Encephalitis." The First Councilor District embraces the county medical societies of Boone, Carroll, DeKalb, Jo Daviess, Kane, Lake, McHenry, Ogle, Stephenson and Winnebago.

Chicago

Annual Lectureship.—The Phi Lambda Kappa Fraternity at the University of Illinois College of Medicine has established an annual lectureship. The initial lecture, on "Behavior and Neurosis," was given at the college October 27 by Dr. Jules H. Masserman, assistant professor of nervous and mental diseases at Northwestern University Medical School.

Research on Alcoholism.—The Research Council on Problems of Alcoholism, an associate of the American Association for the Advancement of Science, has granted $4,826 to the Chicago Committee on Alcoholism for the conduct of research work in a Chicago institution. This is the third grant made this year by the council, the others being to Cornell University Medical College, New York, $30,000 underwriting the second year of a five year project, and $20,000 to New York University College of Medicine-Bellevue Hospital.

University Appointments.—Dr. Robert C. Berson of Rye, N. Y., has been appointed assistant dean of the University of Illinois College of Medicine and assistant director of clinics for the university hospitals. Dr. Berson, a graduate of Vanderbilt University School of Medicine, Nashville, 1931, has been an attending physician at the United Hospital, Port Chester, N. Y. He was attached to the 300th General Hospital during the war. Dr. George R. Minor of Charlotesville, Va., has been appointed assistant professor of surgery. A graduate of the University of Virginia Department of Medicine, Charlottesville, 1940, Dr. Minor served as an instructor in surgery at the University of Michigan Medical School, Ann Arbor, from 1947-1948.

Survey of Q Fever.—Representatives of management and labor in the meat and dairy industries met at the health department recently to arrange for the collection of 1,000 blood samples for a survey of Q fever in Chicago. The disease appears to be an occupational hazard to livestock workers. For the survey the Chicago City Health Department teams are collecting blood samples from packing house workers, slaughter house workers, rendering plant workers and workers on dairy farms, at raw milk receiving stations and at pasteurization plants. Q fever was first reported in Australia in 1937. Although no cases diagnosed as Q fever were reported here in 1947 or in 1948 to date, there were 30 cases reported among Chicago packing house workers in 1946.

MASSACHUSETTS

Personal.—Dr. Theodore Fischer-Galati, Lawrence, has been reinstated as professor of ophthalmology at the University of Rome, Italy. He expects to lecture next spring on American Contributions in the Advancement of Ophthalmology before returning to the United States to practice.

Frances Stern Scholarship Fund.—The Frances Stern Scholarship Fund has been established at Tufts College Medical School, Boston, in honor of Miss Frances Stern, an authority in the field of nutrition who died last year. Tufts College, in recognition of the high standards she set, is now granting a master's degree to those who satisfactorily complete a new course of study in nutrition and dietetics in conjunction with the field work completed at the Frances Stern Food Clinic. Contribution to the fund should be sent in care of Boston Dispensary, 25 Bennet Street, Boston.

MINNESOTA

Personal.—On a recent trip to South America Dr. Albert C. Broders, Mayo Clinic, Rochester, was made an honorary member of the Faculty of Biology and Medical Sciences of the University of Chile; he is one of five North Americans to receive this honor.——Dr. Philip S. Hench, Rochester, has left for Europe to deliver the Samuel Hyde Memorial Lecture at the Royal Society of Medicine in London and the Heberden Oration before the Heberden Society in London. He will also address the Norwegian and Danish rheumatism associations and will speak in Norway.

Report of Cancer Detection Center.—The University of Minnesota reports that more than one half of the 957 persons examined at the Cancer Detection Center in Minneapolis during the first seven months of its operation had abnormalities requiring medical attention, including 15 definite cases of cancer, 235 precancerous lesions, 131 benign tumors, 270 nontumorous but abnormal conditions and 40 suspicious tumors. About 4,000 are waiting for appointments at the center. Persons requiring medical attention are referred to their personal physicians for treatment. A registration fee of $5 is charged unless the person is unable to pay. A project of the university's medical school, the Cancer Detention Center is financed in part by the Minnesota state division of the American Cancer Society, the National Cancer Institute of the U. S. Public Health Service and the university's malignant disease research fund.

NEBRASKA

Personals.—A parade was held recently at the Nemaha County Fair to honor Dr. Isaiah W. Irvin, a general practitioner and former mayor of Auburn.——The investiture of Dr. Adolph Sachs, Omaha, as Knight Commander, with Star, of Saint Gregory the Great, conferred by Pope Pius XII, is to be conducted by the Archbishop of Omaha, the Most Reverend Gerald T. Bergan, November 19 at Hotel Fontenelle, Omaha at 7:30 p. m.

Hospital News.—Ground was broken September 13 for a one hundred and thirty-five bed addition to St. Joseph's Hospital, Omaha. The five story addition, to cost about $1,686,460, will be called the Our Lady of Victory unit, and its facilities will be devoted to the care of nervous and mental patients.

NEW JERSEY

Public Health Week.—Under the sponsorship of the Medical Society of New Jersey, its twenty-one component county medical societies, its woman's auxiliary and the local and state health departments, Public Health Week will be celebrated in New Jersey November 8-12. Public speakers, forums, radio talks, newspaper features and motion pictures will make up the program. An effort will be made to interpret the advances in medical science to the people.

NEW YORK

Graduate Assembly in Anesthesiology.—The New York State Society of Anesthesiologists will hold its third graduate assembly at the Hotel New Yorker, New York, December 9-10. Each panel will be devoted to teaching fundamental subjects related to clinical applications. Out of state members of the faculty include Drs. Cecil K. Drinker, Boston; Isidor S. Ravdin, Philadelphia; James C. White, Boston; Maurice H. Seevers, Ann Arbor, Mich.; Archibald R. McIntyre, Omaha, Neb., and John C. Krantz Jr., PH.D., Baltimore.

Graduate Lectures.—The Medical Society of the State of New York and the New York State Department of Health have arranged the following graduate lectures: The Alleghany County Medical Society meeting at the Hotel Belmont in Belmont November 11 at 2 p. m. will hear Dr. Henry C. Shaw, Rochester, speak on "Common Diseases of the Skin." On November 18 Glens Falls Academy of Medicine will hear Dr. Linn J. Boyd, New York, speak on "Pulmonary Embolism" at the Crandall Library, Glens Falls, at 8:30 p. m. Four lectures have been arranged for the Nassau County Medical Society on Thursday afternoons at 4 p. m. at the Nassau Hospital Auditorium, Mineola:

Nov. 11, Herman Goodman, New York, The Prescription for the Skin; General Principles in Prescription.
Nov. 18, Stuart L. Vaughan, Buffalo, Diagnosis and Treatment of the Anemias.
Dec. 2, George E. Anderson, New York, Detection in Diabetes.
Jan. 27, Richard S. Gubner, New York, Newer Concepts and Therapy of Hypertension.

New York City

Diabetes Association Meeting.—The New York Diabetes Association, Inc., will hold an open meeting sponsored by the Committee on Internal Medicine at the New York Academy of Medicine November 12 at 8:30 p. m. Dr. Jerome W. Conn, associate professor of internal medicine at the University of Michigan Medical School, Ann Arbor, will speak on metabolic effects of pituitary adrenocorticotropic hormone. Drs. George E. Anderson, Jacques L. Gabrilove and E. Abbie I. Knowlton of New York will take part in the discussion.

Industrial Health Conference.—The Commerce and Industry Association of New York, Inc., and New York's doctors and businessmen will hold a health conference December 1 in cooperation with the Institute of Industrial Medicine of the New York University-Bellevue Medical Center and medical organizations. Speakers at the meeting, which will be held at the headquarters of the association, 233 Broadway, include Drs. Edward J. Steiglitz, Washington, D. C.; Harry S. Mustard, New York; Royd R. Sayers, Washington, D. C.; John J. Wittmer, New York, and Dean Thorndike Saville, New York. Dr. Anthony J. Lanza of the Institute of Industrial Medicine will serve as chairman.

Lectures for Laymen.—The New York Academy of Medicine will present its fourteenth series of Lectures to the Laity on "The Future in Medicine" beginning November 11 and extending through Feb. 10, 1949, at the academy, 8:30 p. m. Admission to the lectures, which are broadcast by WNYC, is free.

Nov. 17, Mr. Robert P. Patterson, New York, The Linsly R. Williams Memorial Lecture: Some Problems in Law and Medicine.
Dec. 9, Ephraim Shorr, New York, The Endocrines: Masters or Servants?
Dec. 23, Leo Alexander, Boston, The One Hundredth Anniversary Discourse of the New York Academy of Medicine: Science Under Dictatorship.
Jan. 13, William C. Boyd, Ph.D., Boston, Blood and Man.
Jan. 27, John R. Dunning, Ph.D., New York, The Future of Nuclear Energy.
Feb. 10, George E. Gardner, Boston, The George R. Siedenburg Memorial Lecture: The Criminal in Our Midst.

OHIO

Professor Lauda to Lecture.—Ohio State University has invited Dr. Ernst von Lauda, professor of medicine and director of the First Medical Clinic of the University of Vienna, as a visiting professor in medicine beginning about Jan. 8, 1949. The university is arranging a speaking tour for him from January 15 to March 1. The titles of his lectures will be Differential Diagnosis of Various Types of Liver Cirrhosis, Primary Ligurias, Pathogenesis of Tetany, Proctalgia Fugax (rectal neuralgia), Dyspragia Arteriosclerotica Intestinalis Intermittens (abdominal angina), Differential Diagnosis and Therapy of Enteritis and Ulcerative Colitis, Claudicatio Venosa, and Anemia, Type Lederer.

PENNSYLVANIA

Society Election.—At the annual meeting of the Pennsylvania Psychiatric Society in Philadelphia October 7, Dr. Thomas A. Rutherford, Waymart, became president; Dr. Harold L. Mitchell, Pittsburgh, president elect, and Dr. Philip Q. Roche, Philadelphia, secretary-treasurer. The society voted to make formal application to the Council of the American Psychiatric Association for recognition as the district branch society of the association for Delaware and Pennsylvania.

Philadelphia

Personal.—Dr. Edwin J. Fellows, associate professor of pharmacology at Temple University School of Medicine, has been appointed head of the pharmacologic laboratories at Smith, Kline and French Laboratories. Dr. Fellows will retain his professorship at the university, where he has been on the faculty since 1935.

University Appointment.—Dr. Arno E. Town, clinical professor of ophthalmology, New York University College of Medicine, was appointed professor of ophthalmology at the Jefferson Medical College July 1, succeeding Dr. Charles E. Shannon, Philadelphia, who retired on that date. Dr. Town was graduated from Jefferson Medical College in 1926.

Meeting of Resident Physicians.—The annual banquet of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held December 7 at the Penn Sheraton Hotel. The guest of honor will be Dr. Edward J. G. Beardsley, Philadelphia. For reservations address the secretary-treasurer, Dr. Robert C. McElroy, 133 S. 36th St., Philadelphia 4.

Ordinance on Air Pollution Control.—An ordinance establishing a Division of Air Pollution Control in the Bureau of Health of Philadelphia has been approved. The ordinance also establishes within the bureau an Air Pollution Control Board of seven members, who will receive no compensation. The board is to assist hotel, apartment, commercial and industrial building owners in maintaining proper combustion of fuel. Fines and imprisonment are provided for those who violate the provisions of the ordinance.

UTAH

State Medical Election.—Dr. Orin A. Ogilvie, Salt Lake City, was installed as president of the Utah Medical Association at its annual meeting in September. Dr. Conrad H. Jenson, Ogden, was named president elect, and Dr. Leslie B. White of Salt Lake City was relected treasurer. The next annual meeting will be held in Salt Lake City.

Dr. Branch to Head Psychiatry Department.—Dr. C. H. Hardin Branch, until recently executive director of the Institute of Pennsylvania Hospital at Philadelphia, has been appointed professor and head of the newly formed department of psychiatry at the University of Utah College of Medicine, Salt Lake City. Dr. Branch, a graduate of Tulane University of Louisiana School of Medicine, New Orleans, 1935, assumed his duties Oct. 1, 1948.

WISCONSIN

Society News.—At a meeting of the University of Wisconsin Medical Society October 13, Dr. Arthur B. Appleton, professor of anatomy, University of London, discussed "Bronchopulmonary Segments and Variations in Pulmonary Vascular Patterns."

Dr. Joslin to Give Memorial Lecture.—The annual Arthur S. Loevenhart Memorial Lecture will be given by Dr. Elliott P. Joslin of Boston, on "Observations on Diabetes Mellitus," in the auditorium of the Service Memorial Institutes Building, University of Wisconsin Medical School, Madison, November 10 at 8 p. m. Dr. Joslin has long been associated with Harvard University Medical School, where he is an emeritus professor of medicine. He comes to Madison under the sponsorship of the Wisconsin chapter of Phi Delta Epsilon, medical fraternity. Dr. Loevenhart was professor of pharmacology at the state medical school for many years prior to his death, April 19, 1929.

GENERAL

Inter-American Congress on Brucellosis.—The second Inter-American Congress on Brucellosis will be held November 17-20 at Mendoza, Argentina and November 22-26 at Buenos Aires, Argentina under the auspices of the Argentine government and the Pan American Sanitary Bureau. Countries represented on the program are Colombia, Mexico, Peru, Venezuela, Chile, Puerto Rico, Argentina and the United States.

Prof. Baitsell Appointed Editor of Science Magazines.—George A. Baitsell, Ph.D., professor of biology at Yale University, New Haven, has been appointed chairman of the editorial board and editor-in-chief of *Science* and *The Scientific Monthly*. The position of editor of *Science* has been vacant since the death of Willard L. Valentine in 1947. Frank L. Campbell, Sc.D., Washington, D. C., resigned as editor of *The Scientific Monthly* this year.

Death Rate Slightly Increase.—The crude death rate for the United States for 1947 was, according to the National Office of Vital Statistics in the U. S. Public Health Service, 10.1 deaths per 1,000 estimated population. This was the second lowest rate ever recorded for the United States, the lowest rate having been 10.0 in the year 1946. A total of 1,445,370 deaths was registered in the United States during 1947, an increase of 49,753 over the number recorded in 1946.

Gastric Cancer Conference.—A gastric cancer conference, sponsored by the National Cancer Institute, will be held in San Francisco December 13-14, at Stanford University Medical School. The meeting is open to all members of the medical profession and includes among the speakers Drs. John H. Morton, Rochester, N. Y.; George N. Papanicolaou, New York, and Leo G. Rigler, Minneapolis. Information may be obtained from Dr. Morris K. Barrett, Secretary, Gastric Cancer Committee, National Cancer Institute, Bethesda 14, Md.

Diamond Jubilee of Nursing.—The American Nurses' Association of 162,000 registered nurses is sponsoring a Diamond Jubilee during Nurses Progress Week, November 14-20. The memory of Linda Richards, America's first professional nurse, is to be especially honored. Celebrations throughout the country will help focus attention on the improvement of nursing service through the improvement of schools of nursing, economic security for all nurses and adequate licensure laws. It is expected also to aid the recruitment of 40,000 additional students for approved schools of nursing.

Research in Cardiovascular Disease.—The American Heart Association has announced that fellowships for research in cardiovascular disease are available. Application blanks may be obtained from the Medical Director, American Heart Association, 1775 Broadway, New York 19, New York. The aim of the association is to develop a continuing program of research in the field of cardiovascular disease including rheumatic heart disease. Its program will be coordinated with that of the National Heart Institute of the National Institutes of Health, U. S. Public Health Service and the Life Insurance Medical Research Fund.

Incidence of Poliomyelitis.—A total of 1,122 cases of poliomyelitis was reported during the week ended October 20, as compared with 1,207 for the preceding week, a decrease of 85 cases as compared with a decline of 322 cases the preceding week, according to the U. S. Public Health Service. The total to date is 21,515, as compared with 20,686 for the corresponding period of 1946, and for the corresponding week in 1946 a total of 1,042 cases. During the remainder of the year 1946, a total of 4,578 cases was reported. Decreases were reported in most of the states, the principal exceptions being increases in Wisconsin, from 35 to 57, and in California, from 223 to 234, probably as the result of inclusion of delayed reports.

Medical Director of Multiple Sclerosis Society.—Dr. Cornelius H. Traeger, New York, has been appointed medical director of the National Multiple Sclerosis Society. Dr. Traeger, a graduate of Columbia University College of Physicians and Surgeons, New York, is attending physician and co-chief of Arthritis Clinic at the Hospital for Special Surgery and consulting attending physician in internal medicine and chief of the Arthritis Clinic at Roosevelt Hospital. Dr. Traeger will divide his time for the present between his practice and the medical activities of the society, which, since its inception two years ago, has financed seven projects on the cause and treatment of multiple sclerosis. Among these are two multiple sclerosis research clinics, in Boston and in Albany, N. Y. It is planned to finance other projects already approved by the society's Medical Advisory Board when funds are available. Dr. Traeger, as medical director, will administer and coordinate medical research in this field.

Meeting of UNESCO Commission.—In announcing the recent Boston conference of the United States National Commission for the United Nations Educational, Scientific and Cultural Organization, it was stated that more than $150,000,000 in money, materials and equipment was sent abroad in 1946 and 1947 for educational reconstruction in ravaged lands and that thousands of students and teachers, including scores of scientists, have been exchanged with countries all over the world to spread knowledge and international understanding. One hundred teachers were brought to the United States in a single "exchange," and 70 foreign students were provided with technical training through a single institution. The National Commission has sought to stimulate these programs through many national organizations and various types of conferences. The chairman of the National Commission is Milton S. Eisenhower, president of Kansas State College, who gave the opening address at the Boston conference.

Meeting of the Industrial Hygiene Foundation.—Health at Work is to be the subject of the annual meeting of the Industrial Hygiene Foundation of America at Mellon Institute, Pittsburgh, November 18. The program is as follows:

Mr. Andrew Fletcher, New York, chairman of the foundation, and Mr. John F. McMahon, Pittsburgh, managing director, How Big is Our Job?
Thomas Parran, Pittsburgh, Good Health Is Good Business.
John Z. Bowers, Baltimore, Atomic Energy, Industrial Health Implications.
Mr. Theodore F. Hatch, Mr. W. C. L. Hemeon and Dr. C. Richard Walmer, Pittsburgh, What the Foundation is Doing.
William P. Yant, Sc.D., Pittsburgh, Industrial Hygiene Codes and Regulations.
Lillian M. Gilbreth, Sc.D., Montclair, N. J., The Man and the Job.
Mack M. Shafer, Dayton, Ohio, Selection and Placement of People.
Theodore G. Klumpp, New York, Resources of the Older Employee.
Theodore C. Waters, Baltimore, Industrial Health Legislation in 1948.
Mr. Joseph N. Scanlon, Boston, Health and Safety as Causes of Industrial Peace.

Sugar Research Foundation Award.—Entries for the Sugar Research Foundation's 1949 Fourth Intermediate Prize Award of $5,000 should be submitted to the executive secretary of the National Science Fund of the National Academy of Sciences on or before Jan. 1, 1949. The award will be given in recognition of discoveries, inventions or developments in the chemistry, physiology, metabolism or technologic application of carbohydrates which contribute most significantly to an understanding of the functions of sugar (sucrose) or to the practical utilization of sugar (sucrose) as a food or in medicine, agriculture, the arts, the industries or other fields of human endeavor. Selection will be announced about March 15, 1949. Winners of the Intermediate Annual Awards are eligible for the Grand Prize of $25,000 to be given March 1, 1950 for the most important work during the five years preceding. For further details address the Executive Secretary, National Science Fund of the National Academy of Sciences, 2101 Constitution Ave., N.W., Washington 25, D. C.

LATIN AMERICA

Mexican Medical Congress.—The Third Mexican Medical Congress will be held at Hospital General, Mexico City, November 7-13, under the presidency of Dr. Abraham A. González, Mexico City. There will be plenary sessions on gastroduodenal ulcer, nutrition, gastritis, cancer, liver and nutrition, diarrheas, proteins and amino acids. Among the guests will be Drs. John H. Garlock and Arthus H. Blakemore of New York, Henry L. Bockus of Philadelphia, Robert Elman of St. Louis, Sidney A. Portis of Chicago, Fernando Milanés of Havana, Cuba, and Pablo Luis Mirizzi of Córdoba, Argentina. Social activities have also been planned.

Marriages

Frank Windholz, San Francisco, to Mrs. Grace Patricia Salter of New York and Los Angeles, July 19.

Daniel W. Coughlan, Des Moines, to Miss Jacqueline Jeanne DePuy of Centerville, Iowa, July 25.

George W. Groth Jr., Sierra Madre, Calif., to Miss Eileen Margaret Ferguson of Monrovia, July 10.

Charles W. Maplethorpe Jr., Toledo, Ohio, to Miss Dorothy Bowen of Muscatine, Iowa, July 25.

Hartwig Moss Adler, New Orleans, to Miss Loretta Albert at Galveston, Texas, July 16.

Chester J. Fortuna to Miss Marie Mildred Lorentz, both of Rochester, N. Y., July 3.

Elbert Hubbard III to Miss Rita Marie Fath, both of Buffalo, N. Y., July 3.

Deaths

George Linius Streeter, Baltimore; born in Johnstown, N. Y., Jan. 12, 1873; Columbia University College of Physicians and Surgeons, New York, 1899; demonstrator in anatomy of the nervous system at Albany Medical College, 1901-1902; served as instructor in anatomy at Johns Hopkins University School of Medicine, Baltimore, and from 1906-1907 as assistant professor of anatomy at the Wistar Institute of Anatomy and Biology, University of Pennsylvania, Philadelphia; professor of anatomy and director of the anatomy laboratory, University of Michigan Medical School, Ann Arbor, from 1907 to 1914, when he went to the Carnegie Institution of Washington as research associate, holding that position until 1918; director of the department of embryology at the institution from 1918 to 1940 and chairman of the division of animal biology from 1935 to 1940, when he became research associate; to mark his many years of service to the institution, volume 30 of the Contributions to Embryology, which appeared Dec. 31, 1942, was dedicated to him; the tribute also recognized his work in serving as editor of the volumes 8 to 29 during the period 1917 to 1940; formerly associate editor of the *American Journal of Anatomy;* a member of many national scientific societies, in 1926 he was president of the American Association of Anatomists; received the doctor of science degree from Trinity College in Dublin in 1928 and Union College in New York in 1930; in 1935 was awarded the doctor of laws degree from the University of Michigan; his research had been concerned with human embryology and development of the central nervous system, the internal ear and experimental biology; trustee of the Samuel Reading School; died in the Nathan Littauer Hospital, Gloversville, July 27, aged 75, of coronary thrombosis.

Albert August Gartner ⊕ Buffalo; born in Buffalo July 10, 1887; University of Buffalo School of Medicine, 1914; specialist certified by the American Board of Orthopaedic Surgery; member of the American Academy of Orthopaedic Surgeons; member of the House of Delegates of the American Medical Association from 1943 to 1948; chairman of the board of trustees of the Medical Society of the State of New York; served overseas during World War I; assistant professor of orthopedic surgery at his alma mater; affiliated with the Edward J. Meyer Memorial Hospital, Millard Fillmore Hospital and the Sisters of Charity Hospital in Buffalo; on the consulting staffs of the DeGraff Memorial Hospital, North Tonawanda, J. N. Adam Memorial Hospital, Perrysburg, Jones Memorial Hospital, Wellsville, and Our Lady of Victory Hospital in Lackawanna; died September 9, aged 61, of carcinoma of the esophagus.

George Bolling Lee ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1896; served as professor of gynecology and obstetrics at New York Polyclinic Medical School and Hospital; veteran of the Spanish-American War and World War I; fellow of the American College of Surgeons; for many years on the staffs of Bellevue Hospital, Woman's Hospital and the Hospital for Joint Diseases; member of the board of trustees of the Washington and Lee University in Lexington, Va., died in St. Luke's Hospital, July 13, aged 75, of fracture of the hip received in a fall.

Herbert Benjamin Allen ⊕ Austin, Minn.; University of Minnesota Medical School, Minneapolis, 1937; medical director of the George A. Hormel and Company; died in Bel Air, Calif., August 24, aged 42, of coronary heart disease.

James Samuel Alsobrook, Rossville, Ga.; Atlanta College of Physicians and Surgeons, 1899; member of the American Medical Association; past president of the Walker County Medical Association; at one time a member of the state senate; served as mayor and postmaster; died August 4, aged 77, of carcinoma of the prostate.

William Marsh Anderson ⊕ Haddonfield, N. J.; Boston University School of Medicine, 1906; served on the staff of the Cooper Hospital, Camden, where he died July 25, aged 67, of coronary occlusion.

Ernest Joseph Anthony, Black Mountain, N. C.; State University of Iowa College of Medicine, Iowa City, 1909; member of the American Medical Association and the Iowa State Medical Society; affiliated with Mission and St. Joseph's hospitals in Asheville; died August 27, aged 65, of cerebral hemorrhage.

Arthur Max Aszmann ⊕ East St. Louis, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1910; past president of St. Clair County Medical Society; died August 4, aged 62, of coronary occlusion.

David G. Bardwell ⊕ Charleston, Miss.; Memphis (Tenn.) Hospital Medical College, 1904; died August 10, aged 70, of heart disease.

Sidney Conroy Barrow ⊕ Shreveport, La.; Memphis (Tenn.) Hospital Medical College, 1901; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society and Radiological Society of North America; fellow of the American College of Radiology; past president of the Shreveport Medical Society and the Louisiana State Medical Society; formerly editor of the *Tri-State Medical Journal* (Arkansas, Louisiana and Texas); died August 11, aged 72, of uremia.

Joseph Mitchell Barsky ⊕ Wilmington, Del.; Jefferson Medical College of Philadelphia, 1914; retired as a brigadier general of the Delaware National Guard after twenty-five years' service; awarded the Legion of Merit in 1944 for outstanding service as a sanitary inspector at an island base in the Pacific from February 1942 to February 1943; served during World War I; past president of the New Castle County Medical Society; affiliated with the Wilmington General Hospital, where he died July 31, aged 56, of coronary thrombosis.

Carroll Charles Beach, Hartford, Conn.; Boston University School of Medicine, 1899; formerly served with the Connecticut Naval Militia; died August 16, aged 73, of arteriosclerotic heart disease.

Joseph Bear ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1912; assistant professor of obstetrics at his alma mater; member of the South Atlantic Association of Obstetricians and Gynecologists; president of the Richmond Obstetrical and Gynecological Club; served during World War I; affiliated with the Retreat for the Sick, St. Luke's Hospital, Medical College of Virginia Hospital, Grace Hospital, St. Elizabeth's Hospital and the City Home; died August 28, aged 59, of coronary thrombosis.

William Frederick Bender ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1913; served on the gymnasium staff of Columbia University and with the urologic clinic of the outpatient department of St. Luke's Hospital; died August 29, aged 72, of an infection with virus x.

Alice McL. Ross Bennett, Buffalo; University of Buffalo School of Medicine, 1890; died August 9, aged 81, of cerebral thrombosis.

Montgomery Herman Biggs ⊕ Rutherfordton, N. C.; University of Pennsylvania Department of Medicine, Philadelphia, 1897; member of the Southeastern Surgical Association; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; affiliated with Rutherford Hospital, where he died August 28, aged 78, of hemiplegia of the left side and thrombus of the middle meningeal artery.

Benjamin Stephen Black, Rochester, N. Y.; Rush Medical College, Chicago, 1936; member of the American Medical Association; formerly secretary of the Clarke County (Ala.) Medical Society and health officer for Clarke County; served overseas during World War II; formerly affiliated with Mount Morris (N. Y.) Tuberculosis Hospital; died in Strong Memorial Hospital August 30, aged 45, of coronary occlusion.

Leo Blass, Los Angeles; St. Louis College of Physicians and Surgeons, 1908; died in Tel Aviv, Israel, August 21, aged 65, of heart disease.

Courtland Linden Booth ⊕ Portland, Ore.; Western Reserve University Medical Department, Cleveland, 1908; member of the Portland Academy of Medicine; formerly on the faculty at the University of Oregon Medical School; served as secretary of the Oregon State Medical Society; recent chairman of the state and the county committees on industrial health; on the staffs of the Providence Hospital, St. Vincent's Hospital and the Portland Sanitarium and Hospital, where he died July 13, aged 71, of coronary occlusion.

Robert Emmett Bowman, Bronwood, Ga.; Atlanta College of Physicians and Surgeons, 1904; formerly mayor and member of the school board; served during World War I; died in Dawson, July 14, aged 65, of coronary thrombosis.

Theron Robert Bradley ⊕ South Norwalk, Conn.; University of Maryland School of Medicine, Baltimore, 1914; died July 7, aged 69, of coronary thrombosis.

Erwin Sheridan Briggs, Warren, Pa.; Jefferson Medical College of Philadelphia, 1906; past president and secretary of the Warren County Medical Society; member of the American Medical Association; served during World War I; secretary of the board of health of Warren and school district physician; county medical director; affiliated with Warren General Hospital, where he died August 18, aged 71, of cerebral thrombosis.

Stanley Needham Brinson, Memphis, Tenn.; Memphis Hospital Medical College, 1908; member of the American Medical Association; served overseas during World War I; died August 1, aged 67, of heart disease.

George W. Brooks, Tustin, Mich.; Detroit College of Medicine, 1901; died July 22, aged 69, of cirrhosis of the liver and chronic nephritis.

Carl Wilson Brown, Lancaster, Ohio; Starling-Ohio Medical College, Columbus, 1910; member of the American Medical Association; secretary of the Fairfield County Medical Society; served overseas during World War I; a medical examiner for the Selective Service Board during World War II; for many years affiliated with the Boys' Industrial School Hospital; on the staff of the Lancaster Municipal Hospital, where he died August 12, aged 60, of cerebral hemorrhage.

Everett Rhea Brown, Chicago; Bennett Medical College, Chicago, 1916; died August 20, aged 57, of chronic myocarditis and hypertension.

Sidney Pope Brown, Potsdam, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; member of the American Medical Association; served during World War I; for many years county coroner and town and village health officer; served as president and member of the staff of Potsdam Hospital, where he died August 3, aged 78, of diabetes mellitus.

Oliver C. Brunk ⊕ Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1903; served in France during World War I; surgeon for the police department; member of the staff of the Johnston-Willis Hospital; formerly superintendent of the Eastern State Hospital, Williamsburg; died in the Johns Hopkins Hospital, Baltimore, August 19, aged 69, of empyema.

Rosabell A. Butterfield, Indianola, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1907; member of the American Medical Association; served as president of the Warren County Medical Society; died in the Mercy Hospital, Des Moines, July 14, aged 83, of a fracture of the hip received in a fall and uremia.

Michael Howard Gilbert Carmody, Painesville, Ohio; Cleveland Medical College, Homeopathic, 1897; affiliated with the Lake County Memorial Hospital; died August 27, aged 71, of cerebral thrombosis.

Henry Gerald Carroll ⊕ Salem, Mass.; Dartmouth Medical School, Hanover, N. H., 1907; member of the New England Ophthalmological Society; fellow of the American College of Surgeons; affiliated with the Salem (Mass.) Hospital and the Beverly (Mass.) Hospital, where he died August 11, aged 64, of toxemia and agranulocytosis.

Maurice Caspe, New York; University of the City of New York Medical Department, New York, 1886; formerly on the staff of Flower Hospital; died August 31, aged 90, of pneumonia.

Francis Milton Chapman, Milwaukee; Rush Medical College, Chicago, 1892; died in Milwaukee Hospital August 14, aged 78, of injuries received in a fall and diabetes mellitus.

John Albert Chenoweth, Joplin, Mo.; Rush Medical College, Chicago, 1914; member of the American Medical Association; past president of the Jasper County Medical Society; served during World War I and later in the army of occupation; for many years city physician and member of the library board; affiliated with St. John's Hospital and Freeman Hospital; died July 15, aged 58, of coronary occlusion.

Max Climan ⊕ West Hartford, Conn.; Columbia University College of Physicians and Surgeons, New York, 1915; specialist certified by the American Board of Radiology; member of the New England Roentgen Ray Society, Radiological Society of North America and the American College of Radiology; consulting roentgenologist at the Veterans Administration Hospital in Newington; on the staff of Mount Sinai Hospital in Hartford, where he died August 18, aged 56, of pulmonary embolus and bleeding peptic ulcer.

Robert Joseph Conlon ⊕ Washington, D. C.; Georgetown University School of Medicine, Washington, 1918; clinical professor of medicine at his alma mater; for many years chief of staff of Providence Hospital; died August 22, aged 55, of coronary thrombosis.

Marcellus Ellsworth Coy ⊕ Dayton, Ohio; Detroit College of Medicine, 1901; died in Miami Valley Hospital August 1, aged 73, of carcinoma of the bladder.

Alva Brown Craddock ⊕ Asheville, N. C.; Johns Hopkins University School of Medicine, Baltimore, 1918; member of the American College of Chest Physicians; fellow of the American College of Physicians; affiliated with the Asheville Mission and Biltmore hospitals; died July 29, aged 59, of chronic duodenojejunitis.

Alfred Penn Crain ⊕ Shreveport, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1907; city physician; fellow of the American College of Surgeons; past president of the Shreveport Medical Society; affiliated with the North Louisiana, Highland and T. E. Schumpert Memorial sanitariums and Tri-State Hospital; died August 16, aged 67, of coronary occlusion.

Robert James Danehy, Newton, N. C.; St. Louis University School of Medicine, 1943; member of the American Medical Association; died in August, aged 31, of injuries received in a plane crash.

Ludwig Frank Derfus ⊕ Salem, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1911; served overseas during World War I; on the staff of the Salem City Hospital, died August 4, aged 62, of injuries received when struck by a taxicab.

Herman Russell Dewey ⊕ Bellevue, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1897; served during World War I; died July 30, aged 80, of cerebral hemorrhage.

Frank P. Donahue, Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1905; died in St. Camillus Hospital, Wauwatosa, August 18, aged 66, of an accidental fall, myocarditis and essential hypertension.

Samuel Earl Eagon, Cincinnati; Eclectic Medical College, Cincinnati, 1915; served during World War I; died in the Bethesda Hospital August 7, aged 57, of pulmonary embolism and myocardial infarction.

Kurt Eichwald, Zanesville, Ohio; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, 1920; member of the American Medical Association; died August 31, aged 57.

Erich Richard Erlanger, Rockford, Ill.; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1928; member of the American Medical Association; affiliated with St. Anthony Hospital, where he died August 9, aged 46, of carcinoma.

George B. Fadeley, Arlington, Va.; University of Maryland School of Medicine, Baltimore, 1889; for many years president of the Falls Church (Va.) Bank; died August 18, aged 86.

Charles Hardy Fair, Greenville, S. C.; George Washington University School of Medicine, Washington, D. C., 1909; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; served during World War II; affiliated with Greenville City and St. Francis hospitals; died August 5, aged 67, of chronic pulmonary fibrosis.

Carl Lowell Fairbank, San Diego; Chicago Homeopathic Medical College, 1894; died August 10, aged 76, of arteriosclerosis and pyelonephritis.

George Washington Fithian ⊕ Perth Amboy, N. J.; University of Pennsylvania Department of Medicine, Philadelphia 1899; past president of the Middlesex County Medical Association; served during World War I; formerly city physician; on the staff of Perth Amboy General Hospital, where he died August 9, aged 72, of perforated duodenal ulcer.

Joseph Daniel Foley, Springfield, Mass.; University of Maryland School of Medicine, Baltimore, 1916; served during World War I; assistant city physician; on the courtesy staff of Mercy Hospital, where he died August 13, aged 55, of cerebral hemorrhage.

Edward Aloysius Gorman, Alexandria, Va.; Georgetown University School of Medicine, Washington, D. C., 1898; member of the American Medical Association; for many years health officer of Alexandria; chief medical examiner of the draft boards in Alexandria and Arlington during World War I; on the staffs of Emergency, Sibley and Casualty hospitals in Washington, D. C.; died in Ellicott City, Md., July 19, aged 75, of prostatic carcinoma.

Edward John Grainger, Winthrop, Mass.; Harvard Medical School, Boston, 1903; member of the American Medical Association; died in Concord, N. H., July 25, aged 70, of gastric hemorrhage.

Edgar Agassiz Green, Ridgway, Ill.; Barnes Medical College, St. Louis, 1898; died July 26, aged 74, of myocarditis and hypertension.

Bruce Garfield Hamlin, Scranton, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1909; member of the American Medical Association; on the staff of Hahnemann Hospital; died July 30, aged 67, of coronary thrombosis.

John La Fayette Hart, Lancaster, Ky.; Hospital College of Medicine, Louisville, 1905; member of the American Medical Association; died in the Ephraim McDowell Memorial Hospital, Danville, July 23, aged 70, of injuries received in an automobile accident.

Alvin Thomas Jordan, Hurricane, W. Va.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; died in Charleston July 20, aged 72, of carcinoma of the stomach.

Clarence W. Keene ✠ Silverton, Ore.; University of Oregon Medical School, Portland, 1901; on the staff of Multnomah County Hospital; died July 25, aged 73, of heart disease.

Oza Joseph LaBarge ✠ Alexandria, La.; University of Michigan Medical School, Ann Arbor, 1923; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the Utah State Medical Association; served during world wars I and II; chief of the medical division of the Veterans Administration Hospital; died July 28, aged 50, of cerebral hemorrhage.

Norman Jacob Lebhar, New York; Columbia University College of Physicians and Surgeons, New York, 1900; died in the Lenox Hill Hospital July 25, aged 69, of carcinoma of the cecum.

Edmond Rushin Lett, Tallassee, Ala.; Louisville (Ky.) Medical College, 1905; member of the American Medical Association; served during World War I; senior surgeon for the Tallassee Falls Manufacturing Company for many years; died July 18, aged 66, of acute cholecystitis.

Louis Levy ✠ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1908; affiliated with Hotel Dieu and the Touro Infirmary; died July 24, aged 62, of coronary thrombosis.

Luther Longino, Minden, La.; Missouri Medical College, St. Louis, 1882; died July 29, aged 100, of senility.

John Harrison Lynn, Pocatello, Idaho; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1912; for many years city physician; died July 30, aged 72, of coronary thrombosis.

Emanuel Manko, Kansas City, Mo.; University Medical College of Kansas City, 1905; at one time professor of chemistry at the Kansas City College of Pharmacy; for many years on the staff of St. Joseph Hospital; died July 19, aged 74, of arteriosclerosis and pernicious anemia.

Henry James Schwensen ✠ Canton, Ohio; Ohio State University College of Medicine, Columbus, 1925; affiliated with the Aultman Hospital; died July 25, aged 54, of coronary occlusion.

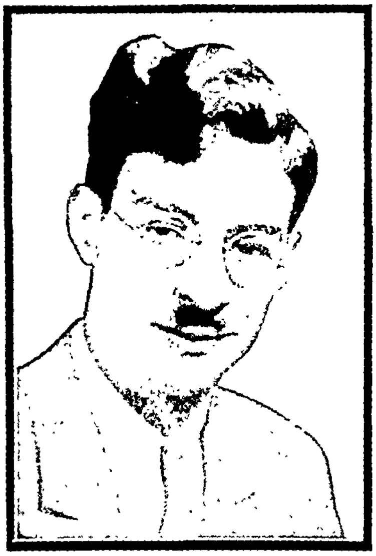
Frank Leslie Snyder, Fort Lauderdale, Fla.; Ohio State University College of Medicine, Columbus, 1935; member of the American Medical Association; fellow of the American College of Surgeons; served during World War II; on the staff of Broward General Hospital; died in West Palm Beach July 28, aged 38, of injuries received in an automobile accident.

William Earl Thompson, Greeley, Colo.; Colorado School of Medicine, Boulder, 1903; member of the American Medical Association, past president of the Weld County Medical Society; on the staff of the Weld County Hospital, where he died July 28, aged 71, of cholecystitis.

Arnold Traubitz ✠ Leadwood, Mo. (licensed in Missouri in 1905); served during World War I; died July 17, aged 68.

Eric R. Twachtman, Cincinnati; Ohio-Miami Medical College of the University of Cincinnati, 1910; member of the American Medical Association; served in France during World War I; on the staffs of the Deaconess and Good Samaritan hospitals; died in Monhegan Island, Me., July 11, aged 62, of coronary occlusion.

Lieut. James F. Handley Jr.
(MC) U.S.N., 1911-1945



Major Louis W. Schneider
M.C., A.U.S., 1912-1944

Lieut. Daniel A. Shapiro
M.C., A.U.S., 1915-1944

KILLED IN ACTION

James Franklin Handley Jr. ✠ Passed Assistant Surgeon, Lieutenant, U. S. Navy, Marshall, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1937; interned at St. Luke's Hospital in Spokane, Wash., and the U. S. Marine Hospital in Chelsea, Mass.; entered the U. S. Navy in August 1939; missing in action on March 1, 1942 south of Java while serving on the U. S. S. *Langley*; aged 34; presumptive date of death according to the U. S. Navy, Dec. 15, 1945.

Louis W. Schneider, St. Louis; St. Louis University School of Medicine, 1936; member of the American Medical Association; interned at the Jewish Hospital; began active duty in the medical reserve corps of the U. S. Army as a captain in August 1940; later promoted to major in the medical corps, Army of the United States; killed in the South China sea Oct. 24, 1944, aged 32, when a Japanese ship on which he was being transported while a prisoner of war was sunk.

Daniel Albert Shapiro, San Francisco; University of California Medical School, San Francisco, 1940; served an internship and residency at the Mount Zion Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, in July 1941; served on Bataan and was captured by the Japanese on Corregidor; subsequently interned; died in the Asiatic area Oct. 24, 1944, aged 29, when the ship on which he was being transported to Japan was sunk.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 2, 1948.

A Hostel of New Design for Paraplegics

Much attention has been given since the war to the rehabilitation of the disabled, not only of those whose disability was due to war but also of those disabled in civil life. The latest new departure is the building by the Ministry of Pensions at Osterley, near London, of a hostel for paraplegics. It is situated just off the Great West Road because of the light industries which have been set up there in bright modern factories. In the closing months of the war the pioneer work of the Ministry of Pensions hospital at Stoke Mandeville in the treatment of war paraplegics was described in an article in the *Times*. It was there recorded that paraplegics whose plight had once been regarded as hopeless could be assisted with much success to conquer their disability and that some were working part time in a local wireless factory. The progress made was summed up in the House of Commons by Secretary of the Ministry last June, when he said that of about 600 men and women paraplegics from the war 200 were still in hospital; of the remainder 70 per cent were in full and regular employment.

For the paraplegics at Osterley the cooperation of the firms in the district has been obtained through the Ministry of Labor, so that they will be able to take regular jobs at the factories while living in conditions suited to their special needs and under medical care. Later it may be possible to add bungalows which they can share with their families. The hostel at Osterley has been designed and planned by the Ministry of Works in conjunction with Dr. J. F. E. Prideaux, Director-General of Medical Services at the Ministry of Pensions, in the light of the experience gained at Stoke Mandeville. The staff of the Ministry is taking the greatest interest in finding solutions for many unfamiliar problems which arise. Nothing like this hostel has ever been seen before. Except for the quarters of the male nursing staff over the administrative block, the hostel is all on one floor. Doors and windows are wide to permit the passage of hand-propelled chairs in which the disabled spend all their waking hours indoors. The doors move sideways on ball bearings. The touch of one finger is enough to shut or open them. All the furniture is designed to be just the right height for men in wheeled chairs. They use the cords and pulleys to lift themselves in or out of bed or the bath. There are motor-propelled chairs to take each man to his work at the factory.

Medical Schools in Germany

On the invitation of the American authorities, representatives of the General Medical Council, the Royal College of Physicians and the Royal College of Surgeons visited the American zone of Germany and interviewed both members of the United States Medical Service and German teachers and practitioners, in order to assist the Government of the American zone by informing them and the Germans of the system of medical education in England, the discipline of the medical profession and the new National Health Service. They visited Frankfurt, Heidelberg, Stuttgart, Munich, Erlangen and Wurzburg and had discussions with the deans and professors of the medical faculties and also with representatives of general practitioners. A striking feature of the German situation was the immense number of persons who desire to take up a medical career. At Heidelberg there were 1,600 applicants for one hundred and fifty vacancies. At Munich there were 3,000 medical students. In spite of decisions for their reduction, the number itself forms a serious problem for the university. The difficulty is increased by the serious depletion of the teaching staffs, the destruction of hospital buildings and laboratories and the lack of funds. In order to obtain clinical experience many doctors have taken up posts as unpaid assistants at the hospitals. In Frankfurt, for example, Professor Volhard has 16 paid and 51 unpaid assistants in his large medical clinic. The unpaid assistants live a precarious life, subsisting on the charity of their relations or friends, often with insufficient food. The plight of the students is even worse, for housing accommodation is totally inadequate and books almost unobtainable.

The needs of the medical faculties are both financial and academic. More money is required for the rebuilding of hospitals and laboratories, for the payment of more assistants and especially for the payment of research students. At present little or no research is done because of lack of funds. The serious shortage of German textbooks is unavoidable, but the medical schools are also starved of foreign journals, which they cannot buy because of lack of dollars and sterling. This visit was to the American zone only, but it was ascertained that the same conditions prevail in all the medical schools of Germany. The representatives end with a plea for assistance to Germany "if only as an acknowledgment of what we owe to German medicine in the past."

ITALY

(From Our Regular Correspondent)

FLORENCE, Sept. 15, 1948.

Medical Meetings

The Italian committee for the study on rheumatism and the Italian group for the study on metabolism held their annual meetings in the city of warm springs, Acqui, under the chairmanship of Professor L. Zoia.

Professor Condorelli of Catania reported on "acute rheumatic and subacute atypical episodes." He considered the less common aspects, i. e., those in which rheumatic disease may take its course in the absence of any manifestations in the joints. With no reliable laboratory tests the diagnostic presumption in these cases depends nearly altogether on clinical and therapeutic criteria. From time to time, value will be attributed to small signs, which may acquire a decisive significance for the diagnosis of rheumatic infections. It is important to take into account the remote history to detect rheumatic episodes or occasional mild rheumatic recurrences. In the course of the actual attack, pathologic signs may be presented by the cardiovascular apparatus; for example, unprogressive accentuation of the cardiac sounds, appearance of arrhythmia, electrocardiographic changes. Treatment with large doses of sodium salicylate rather than aminopyrine, which according to the speaker may be considered of great importance for the successful treatment of acute rheumatism, may often prove the rheumatic causation of a condition of the type described.

Professor Condorelli considered two atypical aspects of rheumatic infection without rheumatism: One is characterized by fever of various type and degree in the absence of any objective focal sign, and the other presents precocious visceral localizations of great variety

The report of Professor Bassi dealt with "Lactoflavinic Dysgenovitaminosis."

Mycotic and Leukemic Erythroderma

At a meeting of the Italian Society for Dermatology and Syphilography, Professor Mezzadra of the Clinic of Padova, reported on the relation between mycotic and leukemic erythroderma. Then Professor Mezzadra discussed 3 clinical cases.

The first patient, a woman aged 35, had mycosis fungoides of diffuse polymorphous character with erythroderma. The second patient had mycosis fungoides of premycotic type, but with definite signs of incipient polymorphism. The third case was of a lymphadenic type of erythroderma in a man aged 70.

Microscopic examination of the cutaneous lesions and of those of the lymph nodes of the first patient revealed a typically granulomatous structure with incipient sclerosis and giant cells of Sternberg's type, which recalled the structure of malignant lymphogranuloma. The dominant microscopic characteristic of the case was a cellular polymorphism with the presence of plasma cells, lymphoid cells and fibroblasts, which recalled the structure of infectious granuloma.

These and other structural peculiarities observed were interpreted by the author as an attempt of defense of the organism most characteristic of the pretumorous stage in which the cellular proliferation remains disorderly and is ultimately useless.

From a study of the literature on erythrodermatous mycosis, Professor Mezzadra reached the following conclusions: 1. The term mycotic erythroderma does not always satisfy the classic concept of generalized erythema which persists from the beginning to the end. 2. Some cases described by the term mycotic erythroderma may be disputable because they often may be identified with a diffuse erythrodermic picture, with constant polyadenopathy, hepatosplenomegaly and leukemoid state. 3. There are cases of mycosis fungoides for which the term diffuse mycosis fungoides or mycosis fungoides with erythrodermic state may be more appropriate, so far as the generalization of the cutaneous picture is associated with the juxtaposition of polymorphous lesions. 4. Clinically and microscopically, the lymphadenous erythroderma must be differentiated from the mycotic syndrome, although one must recognize that histogenetically both pictures may be led back to a reticuloendothelial proliferative alteration. 5. Some cases described with the term Hebra's pityriasis rubra may be considered as of lymphadenic erythroderma.

Opaque Transbuccal Clysma of Small Intestine

Professor A. Lura reported at the Medico-Surgical Association of Bologna that for about one year he has been studying at the Radiologic Institute and at the Medical Clinic of the University the administration of the contrast medium for the roentgen diagnosis of the small intestine by means of a catheter introduced into the duodenum. The method for which the term "opaque transbuccal clysma of small intestine" has been coined offers great advantages as compared to the normal administration of the opaque paste, which may be summarized as follows: (1) the possibility of obtaining within a few minutes sight of the entire small intestine and occasionally part of the large intestine; (2) the possibility of following the top of the opaque column in its entire course without too long an exposure to the roentgen rays; (3) study of the small intestine when filled; (4) a study of function of the small intestine under mechanical stimulation—a function test.

In addition the following results may be obtained in practice: determination of the importance of the anatomic lesions of the small intestine, and particularly of neoplastic infiltration, superior to that obtained by normal administration of the opaque paste, particularly with regard to the evaluation of the extent of the involvement of the intestinal tract; study of the small intestine in patients in whom the administration of the contrast medium may be difficult by the normal route because of obstinate vomiting; the possibility of confirming by an examination of short duration whether a palpable mass in the abdomen is intrinsic or extrinsic to the alimentary canal; the possibility of demonstrating or excluding the presence of suboccludent stenosis in cases with doubtful interpretation, and direct demonstration of vicious circle in gastroenteroanastomosis.

DENMARK

(From Our Regular Correspondent)

Oct. 9, 1948.

Professor Schmiegelow's Reminiscences

At the age of 90, Professor Schmiegelow has published an autobiography which brings the reader in touch with more than half a century of the modern history of medicine. This nonogenarian with most remarkable mental and physical vitality was an ailing child and a consumptive young man. In childhood he suffered from scrofula and tuberculous glands, and at the age of 21 contracted severe pulmonary tuberculosis, which flared up again at the age of 30. He has filled the subsequent sixty years of his life with tireless energy. Pen portraits of Koch, Pasteur and Lister are drawn by this Danish surgeon, and a dramatic account is given of a debate at the Fourth International Hygiene Congress in Geneva, where Pasteur abused Koch and Koch abused Pasteur to the great amusement of the audience. The account given of Lister's antiseptic activities is more vivid than flattering.

In 1883, Professor Schmiegelow succeeded in introducing otolaryngology as an independent speciality in hospital practice in Copenhagen, but it took him forty-six years to get this speciality on an equal footing with other disciplines, and it was not till some time after he retired at the age of 70 that the salary of his successor was brought up to that of other University professors. For years his surgical colleagues, Professor Block and Professor Rovsing, sneered at otology as a specialty and at otologists claiming to undertake radical operations in their own field. It must have been with an ironic smile that Professor Schmiegelow consented to operate on Professor Rovsing for cancer of the larynx. Professor Schmiegelow has been a familiar figure at so many international medical conferences and over so long a period that the many who have met this richly endowed, cosmopolitan Dane will revive pleasant memories when they scan his entertaining, running commentary on his own experiences and on the many distinguished men whom he has met.

The High Death Rate Among Danish Doctors

A recent analysis of the causes of death among Danish doctors, published by Marie Lindhardt in the journal of the Danish Medical Association, covers the ten year period 1935 to 1944, during which there were 504 deaths among male doctors. Women doctors are not dealt with in this analysis. Had the death rate been the "normal" for the whole population, there would have been only 437.9 deaths among doctors in the same period. A table in which the main causes of death are classified separately shows that infectious diseases (not including tuberculosis), heart disease and suicides were largely responsible for the excess death rate. The figures which follow in brackets refer to the expected or "normal" death rate.

There were 23 (13.3) deaths from infectious diseases other than tuberculosis, 21 (12.5) deaths from suicide and 128 (81.9) deaths from heart disease. These figures tally well with those of other civilized countries, and they are fairly easy to explain. Doctors succumb often to the infectious diseases because they come more in contact with them than other men. They die of heart disease because their work entails exceptionally heavy strain, but why do Danish doctors, like their colleagues in England, commit suicide so often? It can surely not be a coincidence that all the 21 suicides were carried out by poisons to which doctors have, of course, exceptionally easy access. Here in Denmark, as well as in certain other civilized countries, suicides are more common among the well to do, so-called educated classes than among the lower classes. It is not easy to explain this difference. It might be asked why tuberculosis had claimed only 13 (16.4) deaths among male doctors in the ten year period under review. Is it that this disease is recognized earlier in doctors than in other men? Or does tuberculosis weed out several young men before they have had time to qualify as doctors?

The Late Professor Carl Sonne

The news of Carl Sonne's death last June must have made many scientists in different parts of the world wonder whether this was really the man whose name has already figured in textbooks on bacteriology in connection with dysentery bacilli. He is, in fact, the Sonne of dysentery fame, and his M.D. thesis was based on his now historic study of the various bacilli responsible for dysentery. But this particular study was only a fraction of his scientific output. He was born on the island of Bornholm in 1882, and it was to his home on this island that he retired shortly before his death. As a young man he came under the influence of his countryman, Professor Christian Gram, at the Rigshospital in Copenhagen. His bacteriologic bent led to his appointment as head of the Finsen Institute Laboratory, where one of the most important of his studies concerned the part played by light in the formation of vitamin D in the skin. He sought to ascertain which are the components of the spectrum which have a biologic action on living tissues, and if he did not find all he sought he at any rate made observations which will assuredly be helpful to his successors in this field.

After ten years as head of the Finsen Institute Laboratory, Sonne was put in charge of the Medical Polyclinic of the Rigshospital, and some time later succeeded Lundsgaard as head of Department A, in which as a young man he had studied medicine from the clinical side. But he remained a research worker at the same time, and he and his associates spent many years on the study of the mixture of gases in the lungs.

MADRID

(From Our Regular Correspondent)

Sept. 1, 1948.

Aeronautic Medicine in Spain

The National Department of Sanitation in Aviation, of which General Miguel Lafont Lepidana is the head, has important centers for teaching and research on aeronautic medicine in Madrid and in Sevilla, besides centers for either purpose in hospitals and infirmaries in several cities, and centers of aeronautic medical first aid with which all the airdromes and aviation units are provided. There are polyclinics with radiologic departments, in Zaragoza, Valencia, Valladolid, Palma de Mallorca, Las Palmas (the Canary Islands) and Tetuán.

The headquarters of the organization are in Madrid, where there are three independent centers, namely, the Academy of Sanitation, the Central Hospital and a sanatorium against tuberculosis with one hundred and fifty beds. The Center of Research on Aeronautic Medicine is now under construction in a suburban district near Madrid.

In the Academy of Sanitation the work carried on consists of teaching courses for the preparation of medical cadets and of nurses. All personnel, of this national branch has their first medical examination there for entrance to the service. After this examination all the personnel have periodic roentgenographic examinations of the lungs for tuberculosis.

In the Central Hospital there are two departments of general surgery, with Drs. Angel Garaizabal Bastos and Luis Suarez Carreño as heads of the departments. There is also a department of urology, with Dr. Martin Laborda as head. A department for surgery of the lung is to be constructed in the near future. The three complete departments for neuropsychiatry, nutrition and diseases of the digestive tract and diseases of the respiratory and circulatory apparatus are provided with departments of radiology, electrocardiography and metabolimetry. There is also an independent department of general roentgenology, with divisions for roentgen and radium therapy, which include the departments of physical therapy and electrotherapy. There are also a clinic of specialities, departments for infectious diseases and pathologic anatomy and clinical laboratories. Examinations of all aviation personnel are made every six months at the Central Hospital. The examination is carried on by specialists, and the persons showing organic disease, even if minimal, are temporarily removed from duty and may be permanently removed if the organic condition does not improve.

The Center of Research in Aeronautic Medicine, which has a building in University City, is organized in independent sections, namely, Pathologic Anatomy of Flight (Dr. Valle Jimenez, Physician Commandant), General Physiopathology of Flight (Dr. Ruiz Gijón), Physiologic Pathology of Flight (Dr. Grande Cobián) and Department of Aeronautic Medicine (Dr. López Cotarilla). The Center has two low pressure chambers, one for sudden decompression and the other for experiments on animals. The chamber for studies on human beings is used also for physiologic studies of flight personnel who have examinations at the Central Hospital.

The Medical Center of Aviation has carried on important studies on aeronautic medicine. Some of these are:

1. Studies on resistance to anoxia. These studies were carried out on two groups of 20 men each, namely, those who had altitude "training" periods by living in high mountains at least a month before starting to fly and those who had not (controls). The resistance to anoxia, at various altitudes above 4,500 meters (the limit of free normal respiration) was greater in "trained" men than in the controls. The mechanism of defense of hypoxia appeared earlier, and the reserve time for the limit altitude of 7,000 meters (time of appearance of symptomatic disorders) was longer in the former than in the latter. It is apparent from these findings that the stay of pilots in high mountains before starting to fly increases their capacity to withstand altitudes.

2. Physicians at the Center of Medicoaeronautic Research are carrying on studies on the cardiocirculatory, respiratory and sensorial changes, signs of immediate collapse. Changes of the renal function during flying were also studied (the creatinine clearance test). The results of studies on the renal function are confirmatory of previous reports concerning cases of pronounced anuria before and in the course of occurrence of collapse. The experiments carried on by these physicians confirm those reported by Scandinavian and other researchers, namely, that injection of blood of animals in the precollapse stage into normal animals causes fulminant anuria.

3. The Center of Medicoaeronautic Research is carrying on research on the effect on respiration of pure oxygen at different altitudes. Dr. Valle showed the toxic effects of oxygen under high pressure, causing lesions on the lung, alveolar desquamation, general congestion and hemorrhages of capillary vessels and of venules which originate in the hilus. There is arteriolar contraction without any arteriolar lesion. The arterioles may dilate, later on, with frank capillary and venular dilatation (an image which is opposite to that provoked by histamine in the normal lung). There is also regular dilatation of the bronchial tree, the mucosa of which is unfolded without any normal folds, and it is the seat of acute infiltration of the catarrhal type, with eosinophils, histiocytes and plasma cells ("asthma from oxygen," which may progress to asphyxia). These changes are less acute when caused by great altitudes than when caused by moderate altitudes, a phenomenon which probably depends on the relative partial hypopressure of gas in the alveoli which is a natural effect of altitude.

4. Experiments were carried on to ascertain the significance of the reticuloendothelial system in anoxia. The method used was that of the time of disappearance from the blood of vital stains (tripan blue or india ink) in predetermined periods which

during the time of observation were not eliminated through the emunctory organs. The animals breathed for a long time in high altitude atmospheres (in general, the experiments were carried on always at the critical altitude of 7,000 meters). Slight irritation of the reticuloendothelial system and increased functional activity were shown by the prompt elimination of the stains from the blood. The changes of the reticuloendothelial system were either moderate or almost unnoticeable. The results of the aforementioned experiments will be reported by the Center of Research on Aeronautic Medicine in the near future.

The Institute of Aeronautic Medicine, of which Colonel Dr. Jiménez Ontiveros is the head, is also carrying on research which will be reported in the near future.

Correspondence

ARMY MEDICAL SERVICE

To the Editor:—It seems to me that the needs for specialists, set forth in General Bliss's letter, could easily be met if the medical schools were to grant one year's leave of absence to all faculty members who were on essential lists during the war and these men served in appropriate posts in the Army during the next two years. In many cases they could be assigned to service installations within commuting distance of their homes, for at least half of their tours of duty, but all should be at least three months in the overseas installations.

During the war many of us were surprised at the disqualification of medical applicants for trivial physical defects. I was asked to enter the Navy, by the late Commander Eric Liljencrantz, and was rejected for defective vision. My vision was tested, in about thirty seconds, by an enlisted man, but that settled the matter. Why a doctor needs more than 20/20 in one eye and 20/80 in the other is a mystery. Why any doctor who can engage in practice cannot be used in the service would be difficult to explain, since dispensary duty is far less exacting. Yet many men who went through medical school as Army privates were turned down for commissions, in 1944-1946, because of "physical defects" which had in no way interfered with a seventy hour week as interns. Specialists, in many cases, are over 40 years of age and have trivial physical defects, but it should be easy to supply 800 from the group of medical school "essential list" members if the Army wants technical competence and ability to put in a full week's work, rather than some ideal of physical perfection.

William Dock, M.D., Director of Medicine,
Long Island College of Medicine, Brooklyn.

DIABETES DETECTION

To the Editor:—In response to many questions from doctors dealing with methods which may be employed to discover patients with diabetes in a community, the following statement, which should prove helpful, has been prepared. The demonstration by a series of surveys that *there are a million patients with* undiscovered diabetes in the United States and Canada is a challenge to the doctors of these countries to discover these diabetic persons early and to bring to them the advantages of the great discoveries in the treatment of diabetes in recent years. With the cooperation of state and county medical societies, local diabetes associations and all health agencies this may be assured.

In January 1949, there will be available a "kit" which is now in the process of manufacture, which will provide for doctors a method for doing a "screening" blood sugar analysis in his office in five to ten minutes. This blood sugar analysis is so arranged that it screens patients whose blood sugar levels are above or below normal, although it does not give an absolute figure for the blood sugar. However, this method developed by Dr. Wilkerson and his staff of the U. S. Public Health Service will really enable the practicing doctor to do in his office a test which will be of tremendous value in the process of screening out those patients whose glycosuria deserves further study. It will provide a technic which will give the doctor something he needs and at the same time will give great aid to the teaching of diabetes especially in postgraduate courses. In county medical societies, it does seem to me that the work of daibetes detection may be prosecuted with confidence.

Howard F. Root, Boston.

Diabetes Detection Drive Beginning in Diabetes Week, Dec. 6-12, 1948

HOW TO FIND AND HELP THE DIABETIC PATIENTS IN YOUR COMMUNITY

Ten Questions from Physicians: Answers from The American Diabetes Association

"I'll do my share," says the doctor, "but I'd like to ask a few questions about this Diabetes Detection Drive."

1. *What symptoms should suggest early diabetes?*

   Don't wait for any of the typical symptoms of diabetes
   - (*a*) Loss of weight and strength in spite of a good appetite.
   - (*b*) Increase in thirst, (*c*) frequent urination, (*d*) itching.
   - (*e*) Aching pains in the extremities, and (*f*) visual disturbances.

   The early diagnosis of diabetes can only be made with certainty by laboratory tests of the blood and urine.

2. *Who are the people with hidden diabetes? What kind of person is in this group?*

   It may be anyone regardless of race, age, sex, weight or previous state of health. It may be *you.*

3. *How can I find out if I have diabetes?*

   Have the urine tested for sugar one to three hours *after you have eaten a full meal.* Arrange for a blood sugar test if the urine shows even a trace of sugar.

4. *What laboratory findings indicate diabetes with a high degree of probability?*

   Any amount of glucose in the urine, accompanied by blood sugar values * above the following levels:
   - (*a*) Venous blood sugar
     1. By Folin-Wu method—over 130 fasting; over 200 after eating.
     2. By Somogyi method, or other method indicating true glucose value, over 110 fasting, over 150 after eating.
   - (*b*) Capillary blood sugar
     1. By Folin-Malmros method, over 140 fasting, over 240 after eating.
     2. By methods indicating true glucose value, over 120 fasting, over 200 after eating.

   When the reports are close to these values or when there is a complicating illness (for example, hyperthyroidism):

   (*a*) Repeated blood sugar tests should be secured, or

   (*b*) A glucose tolerance test performed for verification, after the illness has subsided. The sugar tolerance test should be done under normal conditions of diet; the diet for three days in advance of the test should include at least 250 grams of carbohydrate per day. The diagnosis of diabetes should not be made on the basis of one high blood sugar report alone.

5. *What laboratory findings usually rule out diabetes?*

   A venous or capillary blood sugar below the following values, 30 to 90 minutes after a meal containing the normal amount of carbohydrate, *providing the diet has not been restricted previously:*
   - (*a*) Folin-Wu (venous or capillary) or similar method, below 120.
   - (*b*) Somgyi, (venous or capillary) or other method indicating true glucose, below 90.

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* All blood sugar values are expressed in mgs. per 100 cc. blood.

6. *When facilities for blood sugar tests are not readily available, what is the alternative?*

A blood sugar test for screening has been introduced by Wilkerson and Heftmann * which enables any physician or technician to make this test in the office or in the home. It does not show the exact level of the blood sugar; it only shows whether the blood sugar is abnormally high or abnormally low. The diagnosis of diabetes should not be made by this test alone. When it indicates high blood sugar, it must be verified by one of the standard methods. If no blood sugar tests are made, the urinalysis should be repeated frequently. If glycosuria is present, accurate blood sugar tests are essential for the diagnosis of diabetes.

7. *What can I, as an individual physician, do to aid in the Diabetes Detection Drive?*

(*a*) Test your own urine today
(*b*) Test each member of your family this week
(*c*) Make urinalysis for
  1. Every new patient routinely
  2. Any patient who has had an acute illness
  3. Obese patients and relatives of diabetics every three to six months.

ALWAYS MAKE URINE TESTS ONE TO THREE HOURS AFTER A MEAL

(*d*) See that a blood sugar test is made following every positive urine test.
(*e*) Participate in programs for such diabetes surveys as may be promoted by county or state medical societies, local, diabetes associations and the public health departments.

8. *In planning for mass surveys should an attempt be made to reach everyone in every community?*

Anyone may develop diabetes and to secure personal protection against preventable ill health, it is sound and feasible to promote the policy of a URINE TEST FOR *EVERY*-ONE EVERY YEAR. This can be accomplished if each practicing physician will average two or three urinalyses each day.

9. *If this policy of annual tests for every one cannot be achieved immediately, in what direction should efforts be aimed first?*

Tests should be sought in:

(*a*) Relatives of diabetics
(*b*) Obese individuals
(*c*) Adults over 40
(*d*) Individuals who feel below par.

10. *What methods are recommended for mass surveys?*

The American Diabetes Association recommends that arrangements for surveys should be organized only with the cooperation and participation of local, county and state medical societies.

In surveys which have been conducted in the past, the urine tests have been made by Benedict's method, the Clinitest or Galatest. The blood sugar tests have been made by the usual standard methods including the Folin-Wu and Somogyi methods.

The Wilkerson-Heftmann screening test will soon become available. It will quickly show the individuals who need a standard blood sugar test.

The Clinitest and Galatest methods for urinalysis are simple and time saving. The reagents must be fresh to give dependable results. Whenever the results are not clear cut, Benedict's test should be made.

It has been pointed out that the work of cleaning glassware can be eliminated in making urinalyses by collection of urine specimens in paper cups and by the use of Galatest.

Some mild cases of diabetes may not be discovered at the initial examination:

(*a*) Unless a test is made within 90 minutes of a full meal.
(*b*) Unless a blood sugar test is made in addition to the urinalysis.

When ideal arrangements cannot be made the minimum goal should be:

(*a*) A urinalysis for everyone at any time in the course of each year.
(*b*) A blood sugar test to follow every positive urine test.

For additional information write to: The American Diabetes Association, 1 Nevins Street, Brooklyn 17, N. Y.

The Committee on Diabetes Detection

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Bureau of Investigation

"DR." C. A. C. FAIMAN SENTENCED FOR FOOD AND DRUG VIOLATION

On Friday, October 1, C. A. C. Faiman of Dallas, Texas, was found guilty by a jury of having caused the introduction of certain misbranded drug products in interstate commerce. District Judge T. Whitfield Davidson of the Northern District of Texas thereupon sentenced him to two years in jail and turned him over to the custody of the attorney general. Faiman's attorney announced that an appeal would be taken, and bond in the sum of $5,000 was set for his liberty pending appeal.

Food and Drug inspectors testified that they watched Faiman ship the unlabeled tubes containing, as an analyst testified, potassium iodide and soft soap. The consignees were doctors of medicine, one in Arkansas and the other in Louisiana. A third doctor of medicine was named party defendant, but was acquitted at the direction of the court at the close of the government's case.

Faiman, however, was also posing as a doctor in Dallas. At one time he claimed graduation and a degree from the old St. Louis College of Physicians and Surgeons, which was involved in a diploma scandal culminating in revocation of its charter in 1927. Student lists for the years 1918-1921 did not, however, include his name. On the basis of the diploma he had obtained, he sought admission to examination for a license to practice medicine in Colorado, but the Board of Medical Examiners of that state refused to accept the credentials.

Faiman was first heard from, so far as the files of the Bureau of Investigation show, in Chicago, where he was operating the "National University of Sciences." He was then known as Charles C. Faiman, although he has also posed as Charles A. Faiman and Charles Andrew Claire Faiman. He was president of the "university," at least in 1925, when a bulletin describing its facilities indicated that it boasted such departments as arts and sciences, divinity, pharmacy, pathology and bacteriology, roentgenology, public health, medicine and surgery, midwifery, embalming and mortuary sciences, chiropractic and orthopraxy, law, music and dramatic arts.

In 1925 Faiman "confessed" to having given diphtheria germs to one William D. Shepherd, who was then indicted on the charge of having murdered William McClintock, his millionaire foster son. Shepherd, however, was acquitted of the charges by a jury in Chicago. In the publicity attending the sensational trial, it was brought out that the National University of Sciences being operated by Faiman was a "diploma mill."

Faiman was next heard from in Florida in 1929. In 1921 he had obtained a license to practice medicine in that state from the old Eclectic Board, four days after the board itself had gone out of existence. A leading member of the board proved to be in the business of dispensing diplomas and licenses. This activity ended in a federal prosecution for him under the postal statutes, in which Faiman was a party defendant. He was not convicted, but his Florida license was finally revoked. In 1930 Faiman posed as a pathologist in St. Joseph, Mo. He was there for a few weeks, but departed without leaving a forwarding address.

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* Wilkerson and Heftmann, J. Lab. & Clin. Med. **33:** 236 (Feb.) 1948. Kit will be available from Eli Lilly Co., Indianapolis, Ind.

Faiman's career in Dallas has covered at least the past ten years. That federal activity was necessary to interrupt his business is unfortunate. Cases such as his should really be local matters.

Medical Motion Pictures

FILM REVIEWS

In the Steps of the Great Physician. 16 mm., color, sound, 1,100 feet (1 reel), showing time thirty minutes. Produced in 1947 by Alan Shilla, Wai, Marathi, North India. Procurable on rental from: Missions Council, 287 Fourth Avenue, New York 10.

This film illustrates the activities of the medical staff and other hospital personnel at the Pierce Memorial Hospital in Wai, North India. While the patient is under treatment it shows his family cooking, cleaning and living on the hospital grounds.

The production is a good example of modern medicine and missionary groups working together to bring good medical care to these foreign areas. It can be recommended as a semi-entertainment film for county and state medical society meetings and for medical auxiliary groups.

The film was made by an amateur photographer whose mother was treated at this hospital. Considering the many local difficulties involved, the photography is very well done.

The following 16 mm., black and white, sound motion pictures are part of a series of five films produced in 1948 by Audio Productions, Inc., New York, for correlation with the Textbook of Healthful Living prepared by Harold S. Diehl, M.D., Dean of the Medical Sciences, University of Minnesota, Minneapolis. Procurable on purchase from McGraw-Hill Book Company, Inc., 330 West Forty-Second Street, New York 18, or procurable on rental from Y.M.C.A. Motion Picture Bureau, 206 South Michigan Ave., Chicago 4.

The Nose, Throat and Ears. 400 feet, showing time ten minutes.

Animated drawings are used to illustrate the normal functioning of the nose, throat and ears. The film clearly portrays the cause of complications arising from the use of nose drops, careless nose blowing and neglected colds. The pictorial presentation of the epiglottis in action is especially good; however, the pictorial presentation of the tonsil left much to be desired. This production is suitable for showing to high school and college students.

The Body Fights Bacteria. 500 feet (1 reel), showing time fourteen minutes.

The film opens with a picture of an exploding atomic bomb. It points out that bacteria may even be more harmful to human life than a bomb explosion. Bacilli, cocci and spirochetes are all shown, with the porcelain filter through which various viruses are known to pass. The ordinary method of growing bacteria on agar plates is demonstrated.

The defenses against bacteria set up by the skin, by the mucous membrane of the nose, throat and gastrointestinal tract, by the lymphatic system and by the blood system, both with its cells and antibodies, are shown. The development of antibodies in the blood through the natural process of having a disease is shown in animation. Artificial immunization through the inoculation of smallpox vaccine is used to illustrate active immunization. Temporary immunization against diphtheria in the presence of an already existing throat infection is demonstrated.

This film covers the subject of the body's defenses against bacteria in a somewhat elementary manner, which should be satisfactory to the average nonmedical person. It should be a useful teaching aid for college and high school students as well as other adult groups. The photography and animation are excellent

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Compensation of Physicians: Collection of Fee by Unlicensed Practitioner.—The plaintiff sued to recover money paid the defendant for certain medical services. From a judgment for the plaintiff the defendant appealed to the municipal court of appeals for the District of Columbia.

The plaintiff suffered from arthritis and went to see the defendant, who employed the title "professor" and who agreed to give the plaintiff a series of treatments at a cost of $440. According to the plaintiff, the defendant said that these treatments would cure her; according to the defendant, however, he told her that he believed that they would be of help. At any rate, the treatments, consisting of massaging and rubbing in of an ointment, were given, and the plaintiff paid $160 on account. She then refused to pay the balance and brought this action to recover that which had been paid. The defendant filed a counterclaim for the unpaid balance of $280.

The plaintiff's claim for recovery was based on the contention that the treatments administered by the defendant were in violation of the healing arts practice act, which defines "the healing art" as including "relieving, correcting or curing" or "attempting to prevent, relieve, correct, or cure any disease," and prohibits the practice of the healing art by anyone not licensed in accordance with the act. The act exempted from its provisions "the practice of massage . . . under the direction of a person licensed to practice the healing art." The evidence showed that the defendant was neither licensed, to practice the healing art nor was he licensed to practice massage. We think it plain, said the court, that the treatments by the defendent, who is neither licensed nor acting under the direction of a licensed person, were in violation of the act, whether such treatments were given in an attempt to cure or to help the plaintiff's arthritic condition.

Considering first the defendant's counterclaim for the balance of his fee, the court said that the general rule is that an illegal contract, made in violation of a statutory prohibition designed for police or regulatory purposes, is void and confers no right on the wrongdoer. Consequently, the trial court properly ruled that the defendant was not entitled to recover the balance of the fee originally agreed on. With respect to the plaintiff's claim for a recovery of the sum which she had actually paid, the defendant contended that if the contract was in violation of the statute then no recovery can be had for money paid for illegal services which have been rendered. It has long been the law, said the court, that where an action is founded on an unlawful contract, the court will not interfere to relieve either of the parties thereto in an action against the other from the results thereof. However, the court continued, if the parties are not in pari delicto, and one of them has not been guilty of serious moral turpitude, he may repudiate the contract and recover what he has paid under it; and even though the party be considered technically in pari delicto he may be permitted to recover if the law in question was passed for his protection and it appears that the purposes of the law will be better effectuated by granting relief than by denying it. In the present case the court concluded that the plaintiff could not be considered in pari delicto with the defendant, but that even if she were it was apparent that the law was passed for the protection of the public, including the plaintiff, and that the purposes of the Act would not be effectuated by permitting the defendant to retain that which he ought not to have received. The public interests, the court concluded, are best served by requiring the defendant to pay back the fruits of his illegal agreement. Accordingly the court ruled that the defendant was not entitled to recover the balance of the fee agreed on and that the plaintiff was entitled to recover the amount which she had already paid. *Rubin v. Douglas, 59 A. (2d) 690 (1948).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

15:175-212 (June) 1948

Effect of Insulin on Motility of Stomach Following Bilateral Vagotomy. M. Feldman and S. Morrison.—p. 175.
Dysentery, Colitis and Diarrhea in Japanese Civilian Prison Camps in Philippines During World War II: II. Secondary Colitis—Postdysenteric and Nondysenteric Animal Parasites. F. G. Haughwout.—p. 176.
Anterior Pituitary and Pancreas. J. Wilder.—p. 183.
Allergic Conditions in Hepatitis. O. C. Pribram.—p. 199.
Tumors Arising in Brunner's Glands. A. O. Wilensky.—p. 206.

American Journal of Ophthalmology, Chicago

31:667-772 (June) 1948

Surgical Treatment of Pterygia Followed by X-Ray Therapy to Prevent Recurrence. H. L. Hilgartner, R. T. Wilson and J. D. Wilson. —p. 667.
*Capillary Fragility and Cutaneous Lymphatic Flow in Relation to Systemic and Retinal Vascular Manifestations: Rutin Therapy. J. M. Donegan and W. A. Thomas.—p. 671.
Mild Glaucoma. A. Posner and A. Schlossman.—p. 679.
Comparison of Aniseikonic Test Instruments and Prolonged Induction of Artificial Aniseikonia. P. W. Miles.—p. 687.
Size of Line in Maddox-Rod Test. R. G. Scobee and E. L. Green. —p. 697.
*Regeneration of Corneal Stromal Cells: I. Technic for Destruction of Corneal Corpuscles by Application of Solidified (Frozen) Carbon Dioxide. A. E. Maumenee and W. Kornblueth.—p. 699.
Treatment of Phorias in Adults. Electra Healy.—p. 703.
*Tissue Research and Cell Culture of Cornea. Doris Hoof.—p. 709.
Comparison of Eye Conditions Among 1,000 Reading Failures, 500 Ophthalmic Patients, and 150 Unselected Children. T. H. Eames.—p. 713.
Sleep with Half-Open Eyes (Physiologic Lagophthalmus). A. Fuchs and F. C. Wu.—p. 717.
Intraocular Pressure of Normal and Glaucomatous Eyes as Affected by Accessory Light Stimuli. R. B. Zaretskaya.—p. 721.

Capillary Fragility and Rutin Therapy.—Donegan and Thomas administered rutin to 81 patients. Forty-five of these had diabetes mellitus, and the other 36 had a variety of ocular and general disturbances. Capillary fragility was found to be abnormally increased in arteriosclerosis and hypertension, to a greater extent in diabetes mellitus, and most markedly in diabetic persons with retinopathies. Rutin has been found to decrease capillary fragility, but not to normal levels in diabetic persons with retinopathies. Although no significant improvement in vision or decrease in retinopathy was observed in diabetes after rutin therapy, it may be significant that neither loss of vision nor increase in retinopathy occurred during ten to twelve months' treatment. Rutin appears to be of benefit in the treatment of Eales's disease and central serous retinopathy.

Regeneration of Corneal Stromal Cells.—Maumenee and Kornblueth point out that regeneration of the cornea has been extensively studied in the past, but, although the origin and mode of replacement of the epithelium, endothelium, and Descemet's membrane is clearly understood, there is still a difference of opinion about the origin of the corneal stromal cells. The authors describe a method for studying regeneration of stromal cells which appears to be superior to the method previously used. Their method destroys the corneal stromal cells without disrupting the corneal lamellae. It employs solidified carbon dioxide (dry ice), absolute alcohol and a solid metal rod. Freezing various sized areas of the cornea to minus 78 C. for three to five seconds produces a convenient lesion for the study of regeneration of the corneal stromal cells. These lesions do not disrupt the corneal lamellae, are not prone to secondary infection and cause little inflammatory reaction. After the lesions have healed the cornea is clear.

Corneal Tissue Research and Cell Culture.—Hoof says that the aim of keratoplasty is to create conditions whereby the host cornea will accept the transplanted material completely so that a later cloudiness, which so often develops in transplantations of the same species but of different blood groups, will not mar the end result. She reasons that if the transplant is kept alive by means of slowly growing cell culture and of the plasma content of the blood of the recipient is increased before the transplant is made, the original structure of the albumin of the transplant could be so changed that it would gradually become assimilated with the albumin of the host. Whether the corneal graft continues to live as an independent tissue or is replaced by regenerated corneal tissue of the host has never been definitely settled. The author describes preliminary experiments in tissue culture which show the possibility of growth of the parenchyma cells out of the substantia propria. They would seem to substantiate the theory that the corneal graft lives as an independent tissue within the host's cornea.

Bulletin of the Los Angeles Neurological Society

13:69-128 (June) 1948

Neurologic Manifestations of Jaundice in Newborn with Particular Reference to Chronic Residuals. L. B. Mann Jr. and C. B. Courville. —p. 69.
Hyperostosing Osteoma of Skull: Report of Case with Consideration of Its Relationship to Other Types of Cranial Osteomas and Hyperostoses. C. B. Courville and H. G. Crockett.—p. 86.
Streptomycin Therapy: Pathologic Basis of Vestibular Disturbances. J. M. Nielsen and C. Marsh.—p. 99.
Polioencephalitis Hemorrhagica Superior: Brief Review. V. J. Miller. —p. 104.

Bulletin New York Academy of Medicine, New York

24:411-478 (July) 1948

*BCG and Newer Epidemiology of Tuberculosis. K. Birkhaug.—p. 411.
*Primary Atypical Pneumonia and Influenza: Diagnosis, Prevention, Treatment. F. L. Horsfall Jr.—p. 431.
Mutational Prophylaxis. H. J. Muller.—p. 447.

BCG and Epidemiology of Tuberculosis.—According to Birkhaug, experimental studies and clinical experience prove that a spontaneous primary infection with tubercle bacilli, which renders the organism hypersensitive to tuberculin, confers a relatively significant resistance against a subsequent tuberculous infection. The first victims of tuberculous disease are tuberculin-negative persons who have escaped a spontaneous and nonprogressive primary tuberculous infection. A result of the modern trend to defer the primary tuberculous infection from childhood to adult life is an increasing tendency among tuberculin-negative persons of early adult age to contract serious clinical tuberculosis when they are intimately exposed to infection with tubercle bacilli. This trend in the epidemiology of tuberculosis has brought about a reorientation toward the use of artificial immunization against tuberculosis by means of BCG. Although there is no definite statistical proof of the effectiveness of BCG under rigidly controlled conditions in man, such evidence is highly suggestive in animal experimentation; universal unanimity obtains as to its harmlessness and near unanimity in regard to its affording almost complete protection against the clinical manifestations of postprimary tuberculosis in children and an incomplete but highly significant protection against clinical pulmonary tuberculosis in adults. The author believes that BCG vaccine should be recommended for extensive use in the United States in tuberculin-negative reactors, in groups occupationally exposed to tuberculous infection, in population groups with high mortality and morbidity due to tuberculosis and where there has been a known exposure to tuberculosis or where an exposure is likely to occur.

Primary Atypical Pneumonia and Influenza.—Horsfall lists the incidence of symptoms in 50 per cent or more of the patients with either of the two disorders. There are five such symptoms. Three of these, headache, chills and malaise, occur with approximately similar frequencies in both illnesses. Cough is much more common in atypical pneumonia than in influenza, and if cough is absent, the diagnosis of atypical pneumonia should be questioned, because these patients usually complain that cough causes more discomfort than any other symptom. Although cough occurs commonly in influenza, it is seldom distressing. The production of sputum also is much more common in atypical pneumonia than in influenza. Fever is almost invariably present in both illnesses, and nasal congestion is also common in both. Altered breath sounds, usually rough or harsh, are heard in over two thirds of patients with atypical pneumonia, but only in about 1 patient in 10 with influenza. Slight dulness is elicited in over 50 per cent of patients with atypical pneumonia but only in about 13 per cent of patients with influenza. Whereas primary atypical pneumonia occurs throughout all months of the year, influenza occurs chiefly during the winter months. The incidence of atypical pneumonia seldom exceeds 0.25 to 1 per cent, whereas during epidemics influenza may have an incidence ranging from 5 to as high as 40 per cent. The incubation period of atypical pneumonia ranges between ten and fifteen days, whereas in influenza it is only one or two days. In atypical pneumonia symptoms develop gradually; in influenza the onset is abrupt. Agglutinins which react at refrigerator temperature with human group 0 erythrocytes are found during convalescence in 20 to 80 per cent of patients with atypical pneumonia. Agglutinins against streptococcus MG also develop during atypical pneumonia in 20 to 80 per cent of patients, but are not produced in influenza. The development of antibodies against either influenza A or B viruses is demonstrable in 70 to 95 per cent of patients with influenza, but such antibodies do not develop during atypical pneumonia. There is no specific prophylactic measure which increases resistance to atypical pneumonia. The relative immunity which follows the injection of influenza virus vaccine probably is not of long duration and may not be effective against virus strains which are widely different from those present in the vaccine.

Cancer Research, Baltimore

7:605-668 (Oct.) 1947. Partial Index

Oral Carcinoma in Monkey Colony: Report of 2 Additional Cases. H. Klüver and A. Brunschwig.—p. 627.
Antibody Response to Tumor Inoculation in Mice with Special Reference to Partial Antibodies. P. A. Gorer.—p. 634.
Uptake of Radiophosphorus in Phospholipid Fraction of Mouse Epidermis in Methylcholanthrene Carcinogenesis. C. J. Costello, C. Carruthers, M. D. Kamen and R. L. Simoes.—p. 642.
Distribution and Growth-Potency of Cells in Transplantable Sarcoma. P. A. Zahl and M. L. Drasher.—p. 658.
Influence of 2,3-Dimercapto Propanol (BAL) on Induction of Skin Tumors in Mice by 3,4-Benzpyrene. L. M. Lusky, H. A. Braun and G. Woodard.—p. 667.

Experimental Medicine and Surgery, Brooklyn

6:125-328 (May-Aug.) 1948. Partial Index

Phototurbidometric Determination of Trypsin. M. H. E. Friedman.—p. 149.
Effect of Steroid Hormones on Carcinogenic Activity of Benzyprene. H. S. Kupperman and R. B. Greenblatt.—p. 156.
Relations Between Bone Matrix and Endocrine System: Clinical and Therapeutic Study. E. Vergara S.—p. 167.
Effect of Penicillin Upon Coagulability of Blood. M. Weiner, K. Zeltmacher and S. Shapiro.—p. 181.
Experimental Allergic Myocarditis. R. Jaffe and E. Holz.—p. 189.
Vacuoles in Paget's Disease. E. Meirowsky.—p. 203.
Intrathoracic Electrocardiography in Patients with Pneumothorax. F. M. Groedel and P. R. Borchardt.—p. 213.

Georgia Medical Association Journal, Atlanta

37:205-242 (June) 1948

Ollier's Disease: Report of Case. R. W. Dickson and Shirley M. Cohen.—p. 205.
Eclampsia. R. E. Jones.—p. 207.
Reaction to Blood Transfusion. J. P. Heard.—p. 212.
Complications of Blood Transfusion. B. Bowman.—p. 217.
Cryptorchidism. R. Coffer.—p. 221.
*Alopecia Areata as Conversion Symptom. R. E. Peck.—p. 226.
X-Hay Fever of South. M. B. Wine.—p. 227.
Presentation of President's Gold Key to Steve Paschal Kenyon. J. C. Patterson.—p. 228.

Alopecia Areata as a Conversion Symptom.—Peck cites 4 patients in whom alopecia areata occurred as the initial symptom of a generalized neurosis. In 2 the onset of alopecia areata was associated with sudden and overwhelming fright. In the other 2 it was associated with the onset of chronic anxiety. In 1 patient the mechanism seems clearly that of a conversion symptom. This same mechanism may be postulated in the other 3, as conversion symptoms are frequently seen in the ordinary traumatic anxiety neurosis and anxiety hysteria.

Illinois Medical Journal, Chicago

93:285-342 (June) 1948

The Challenge of Organized Medicine in a Changing Social Order. I. H. Neece.—p. 298.
Psoriasis, with Special Reference to Etiology and Treatment. H. M. Hedge.—p. 303.
Complications of Arrested Pulmonary Tuberculosis. A. Froman.—p. 306.
Theporin a New Antihistaminic. J. Peters.—p. 314.
*Tularemia and Undulant Fever Treated with Atabrine. D. H. Ecke and D. H. Ecke.—p. 318.
Organization of Blood Bank. S. O. Levinson.—p. 320.
Choosing Therapy for Breast Cancer Patient. S. M. Wolffson.—p. 322.
Solitary Pyogenic Abscess of Liver: Report of Case Due to Anaerobic Streptococci Cured by Penicillin. G. O. Wellman.—p. 327.

Quinacrine Hydrochloride in Tularemia and Undulant Fever.—During the past three years D. H. Ecke, the senior author, observed 8 patients with typical symptoms of ulceroglandular tularemia. Every case was traced to the handling of rabbits a few days before. The patients were given a supply of 1.5 grain (0.1 Gm.) quinacrine tablets with instructions to take one tablet three times a day for five days. Iodized ointment was prescribed for external application to the ulcers. Without exception quinacrine produced favorable results within one to three days, and no patient required treatment after the fifth day. These favorable results induced the senior author to try medication with the same dose of quinacrine hydrochloride (one tablet of 1.5 grains three times a day, for five days) in 4 patients infected with Brucella abortus. Here again the results were encouraging in that a recurrence developed in only 1 of the 4 patients after an interval of several years. Either streptomycin was not available or the patients could not afford the expense involved.

Journal of Lab. and Clinical Medicine, St. Louis

33:651-788 (June) 1948

Production of Temporary Diabetes Mellitus in Man with Pituitary Adrenocorticotropic Hormone; Relation to Uric Acid Metabolism. J. W. Conn, L. H. Louis and C. E. Wheeler.—p. 651.
Comparative Study of Serum Albumin-Globulin Ratio, Cephalin-Cholesterol Flocculation, and Thymol Turbidity Tests for Liver Function. A. C. Kibrick and A. B. Clements.—p. 662.
Dilution Turbidity Test in Serum in Comparison with Thymol Turbidity and Cephalin-Cholesterol Flocculation Tests. F. Dreyfuss.—p. 672.
Experimental Studies on Intravenous Injection of Fat Emulsion into Dogs. H. C. Meng and S. Freeman.—p. 689.
*Hemophilia: Current Theories and Successful Medical Management in Traumatic and Surgical Crises. C. Wright, C. A. Doan, V. A. Dodd and J. D. Thomas.—p. 708.
Experimental Study of Comparative Action of Heparin and Dicumarol on In Vivo Clot. L. Loewe, E. Hirsch, D. M. Grayzel and Florence Kashdan.—p. 721.
Effect of Diethylstilbestrol on Blood Lipids and Development of Atherosclerosis in Chickens on Normal and Low Fat Diet. L. Horlick and L. N. Katz.—p. 733.
Effects of Tetraethylammonium Chloride on Blood Flow in Extremities of Man. O. L. Slaughter, H. S. Brown and K. G. Wakim.—p. 743.
False Positive Tests for Syphilis: Further Study of Their Incidence in Sporozoite-Induced Vivax Malaria. J. F. Kent, W. B. Culwell, G. R. Coatney and W. C. Cooper.—p. 747.
Transient Positive Wassermann Test for Syphilis in Acute Hemolytic Anemia. M. A. Rubenstein.—p. 753.
Purification of Diphtheria and Tetanus Antitoxin by Use of Pepsin. A. Glaubiger.—p. 757.
Antireticular Cytotoxin Serum in Treatment of Arthritis. W. M. Solomon and R. M. Stecher.—p. 768.
Thiocyanate Content of Saliva in Normal and Hypertensive Subjects Before and After Ingestion of Drug. E. J. Fischmann and A. Fischman.—p. 772.

Hemophilia: Medical Management. — In reviewing the therapeutic management of 43 patients with hemophilia over the past seventeen years in the departments of medicine and surgery of Ohio State University Wright and his co-workers differentiate three distinct periods: The first was characterized by the use of nonspecific measures most of which aimed toward increasing the available circulating thromboplastin. These included snake venom, ovarian hormones, placental extracts and foreign protein sensitization, with horse serum or egg albumin as antigens. In the second, despite the use of these measures the continuing necessity for supportive, replacement blood transfusions during acute hemophilic bleeding episodes finally led to the recognition that, of any measure then advocated, whole fresh blood produced the most effective, even though transitory, reduction in the prolonged coagulation time. That fresh or frozen normal human plasma is just as effective as whole fresh blood was demonstrated shortly thereafter. During the third period, World War II gave great impetus to the chemical partition, isolation and therapeutic study of particular fractions from human and bovine blood plasma. As a by-product of these researches has come a so-called antihemophilic fraction of human plasma, which is bringing new hope not only for the better clinical management of hemophilia, but also for the ultimate solution of the problem of the physiology and biochemistry of this disease entity. Studies with the concentrated antihemophilic fraction of Cohn were initiated by the authors early in 1946, when material for clinical studies was made available. Selected cases from their clinical studies are presented to illustrate (1) the comparative effectiveness of the antihemophilic fraction I of Cohn versus freshly thawed plasma in promoting clot formation and (2) the possibility of successful medical management of the hemophilic patient during both elective and emergency surgical treatment.

Journal of Nervous and Mental Disease, New York

107:501-596 (June) 1948

Eight Years Psychiatric Work in England. W. Sargant.—p. 501.
Electroshock Therapy, Clinical and Electroencephalographic Studies. A. Mosovich and S. Katzenelbogen.—p. 517.
Psychometric Changes During Electric Shock Treatment. L. B. Luborsky.—p. 531.
Electro-Encephalogram *in Cerebral Complications of Infectious Mononucleosis*: Report of Case. N. A. Bercel.—p. 537.
Management of Islet-Cell Tumors of Pancreas Correlated with Neuropsychiatric Phenomena. H. L. Mitchell, J. A. Malcolm, D. P. Greenlee and R. C. Hamilton.—p. 545.
Social and Clinical Features of Chronic Alcoholism: Based on Study of 231 Male Patients. M. Ellermann.—p. 556.
Dynamic Neurology. C. D. Aring.—p. 569.
Case Study of Proselyte from Catholicism to Judaism. W. H. Kupper and Bella G. Rubin.—p. 575.
*Electric Shock Treatment in Advanced Pregnancy. J. L. Simon.—p. 579.

Electric Shock Treatment in Pregnancy.—Although electric shock treatment is of value in many psychiatric disorders, its advisability in advanced pregnancy is still questioned. Of the 3 pregnant women reported by Simon 2 were treated during the advanced stage of pregnancy. In 1 of these 2 the last of fourteen shock treatments was given ten days before delivery. In the other case the last of thirteen convulsions preceded delivery by twenty-nine days. Both of these women delivered healthy babies. The other woman had received the last electric shock treatment seven months before delivery. Her infant died two days after birth. The authors believe that the death of this infant had probably no connection with the shock treatment of the mother.

Journal of Thoracic Surgery, St. Louis

17:283-418 (June) 1948

Augmented and Controlled Breathing in Transpleural Operations. F. R. Mautz, C. S. Beck and H. F. Chase.—p. 283.
*Cancer of Lung: Interval and Late Results of Operation in Relation to Topography and Gross Pathology. H. Neuhof and A. H. Aufses. —p. 297.
*Carcinoma of Lung: Factors Affecting Survival After Resection of Cancer of Lung. R. Adams.—p. 306.
Effect of Pulmonary Inflation and Deflation on Circulation. S. A. Thompson.—p. 323.
Regeneration of Defects of Trachea and Bronchi. Experimental Study. R. A. Daniel Jr.—p. 335.
*Eosinophilic Granuloma of Rib. E. Maurer and G. A. DeStefano. —p. 350.
Bronchospirography: Apparatus and Technic. C. M. Norris, Joan Long and M. J. Oppenheimer.—p. 357.
Contralateral Fracture of First and Second Ribs Following Thoracoplasty. A. Guggenheim and B. N. E. Cohn.—p. 366.
Pneumolysis for Cure of Tension Pneumothorax. J. W. Cutler.—p. 374.
Myoblastoma of Bronchus. A. R. Kraus, P. J. Melnick and J. A. Weinberg.—p. 382.
Self-Retaining Scapula Retractor for Thoracoplasty. O. C. Brantigan and T. B. Aycock.—p. 390.
War Wounds of Esophagus. G. N. J. Sommer Jr. and C. E. O'Brien. —p. 393.
Spontaneous Hemopneumothorax Treated by Decortication: Case Report. P. D. Elrod and J. D. Murphy.—p. 401.
Hemangioma of Lung: Review of Four Cases, Including Two Not Previously Reported, One of Which Was Complicated by Brain Abscess Due to H. Influenzae. G. E. Wodehouse.—p. 408.
Use of Oxidized Cellulose in Pleural Symphysis. J. D. Murphy and J. R. McDaniel.—p. 416.

Cancer of the Lung: Late Results of Operation.—Neuhof and Aufses point out that at previous meetings of the American Association for Thoracic Surgery a topographic classification of cancer of the lung was proposed and arguments were advanced to support their contention that the classification should be used as a basis for operability and prognosis. They now submit an analysis of the results of operations based on such a classification. Their observations were made on 52 patients who survived operation. The operations performed in each of three groups were: group I, twenty pneumonectomies and one lobectomy; group II, twelve lobectomies and six pneumonectomies; group III, twelve lobectomies and one pneumonectomy. In group I (cancer of the main bronchus), there were no survivals in patients with extensive regional node involvement. Involvement was limited, or absent, in the 7 patients who survived. In group II (circumscribed cancer), involvement of lymph nodes at the time of operation was rare; yet lymph node metastasis as the cause of death was unexpectedly high. Lobectomy is not curative in the presence of lymph node involvement. Despite the absence of regional node involvement, the results were poor in group III (peripherally invasive cancer), because of local recurrence, usually in the thoracic parietes. Results might be better with wider excision of the thoracic wall. The microscopic features of cancer of the lung bear no significant relation to the ultimate postoperative prognosis. The prognosis after a correctly selected operation for circumscribed cancer of the lung is better than that for cancers of the main bronchus. Lobectomy may be curative for circumscribed and peripherally *invasive carcinoma of the lung.* Good results have been achieved by pneumonectomy or more conservative operations on the basis of the topographic features of the neoplasm. Enthusiasm for surgical treatment of pulmonary cancer is justified when eradication is based on the topographic features.

Survival After Resection for Carcinoma of Lung.—Adams says that in a fifteen year period diagnosis of carcinoma of the lung was established by microscopic proof in 182 cases at the Lahey Clinic. A resection of the lesion by pneumonectomy or lobectomy was done in 56 cases. Eight of these 56 patients died postoperatively. The over-all hospital mortality *of 14.3 per cent has been reduced during the last five years* to 5.1 per cent in thirty-nine resections. Of the remaining 48 patients, 17 were operated on five or more years ago; of these 6 survived over five years and 4 are now living and well after more than five years. A patient who has a resection and survives the operative procedure has approximately a 60 per cent chance of surviving for one or more years. Thereafter, the rate of death from recurrence is directly related to the preoperative duration of symptoms for epidermoid carcinoma. In other varieties, the cell type is of greater prognostic significance. The survival rate in patients for whom lobectomy was selected has been as good as for patients treated by pneumonectomy. The absence of involved nodes increases three fold a patient's chance of being alive and well five years after resection. The cell type of carcinoma found by microscopic examination is the most important single consideration in estimation of prognosis after a resection. If the growth is undifferentiated or oat cell carcinoma in type, less than a year of life may be expected.

Eosinophilic Granuloma of Rib.—Maurer and DeStefano say that approximately 39 cases of eosinophilic granuloma have been reported to date. Only 6 of these lesions have been solitary in the rib. The authors present the case of a boy, aged 16, in whom osteogenic sarcoma of the rib was suspected. Focal osteomyelitis and giant cell tumor were also considered in the differential diagnosis. Excision of the fifth rib, transverse process, intercostal muscle and pleura was performed. A soft, yellowish red tumor mass was encountered completely replacing the normal structure in the vicinity of the angle of the fifth rib. Microscopic examination revealed a typical granulomatous appearance. The condition was diagnosed as eosinophilic granuloma of the rib. The convalescence was uneventful. The patient was well ten months later and presented no evidence of recurrence. Eosinophilic granuloma appears to be a benign lesion of bone which most commonly affects children, adolescents and young adults, especially males. Local tenderness and pain with or without swelling are common symptoms. There may be systemic manifestations including pyrexia, general malaise, loss of weight and leukocytosis with eosinophilia. It is more common for the lesion to be completely silent until discovered on the roentgenogram as a destructive process. The roentgenographic appearance of the individual lesion of bone is that of a small or large irregularly destructive radiolucent zone. *This lesion is easily confused with neoplasm and osteomyelitis.* Since the final diagnosis is not usually made until histologic examination of the tissue has been completed, one cannot know the course of a solitary lesion which closely resembles neoplasm if it were left undisturbed. Eosinophilic granuloma of bone appears to offer an excellent prognosis despite its rapid development, seemingly progressive nature and ominous roentgenographic appearance. The postoperative observations ranging from seven months to six years made by Jaffe and Lichtenstein on patients treated by excision, curettage and radiation therapy have all been encouraging. The prognosis should, however, be guarded in cases in which multiple lesions are encountered. In such situations, visceral lesions should be sought for and careful consideration given to the possibility of Letterer-Siwe disease.

Kansas Medical Society Journal, Topeka

49:189-228 (May) 1948

Diabetic Neuropathy. A. Marble.—p. 189.
Congenital Absence of Left Coronary Artery: Occlusion of Anomalous Branch of the Right Coronary Artery; Pulmonary Embolism. S. M. Wilson.—p. 192.
Cancer of Larynx: 10 Year Review of 74 Cases. W. Barry.—p. 195.
*Creeping Eruption in Kansas. O. S. Walters.—p. 197.

Creeping Eruption in Kansas.—Walters says that creeping eruption, a cutaneous lesion produced in the human skin by the third stage larva of a hookworm, has been regarded as peculiar to the South, especially to the Gulf states. He describes 10 cases of creeping eruption which he observed in Kansas in the course of two years. The lesion produced by the larva is a linear, serpiginous burrow. The track is 1 to 2 mm. wide, red and raised. Vesicles may be formed along the course of the tortuous tunnel. The parasite travels from one to several centimeters a day. The area of the lesion itches intensely. Most of the patients treated by the author responded to freezing with ethyl chloride. Intramuscular injections of 0.5 to 3.5 cc. of stibophen in increasing doses were effectively used in 2 patients, in 1 of them in conjunction with ethyl chloride.

Medical Annals of District of Columbia, Washington

17:311-370 (June) 1948

Streptomycin: Review of Basic Principles and Their Clinical Application. H. L. Hirsh, J. J. Vivino and H. F. Dowling.—p. 311.
Evaluation of Peptic Ulcer Problem. Sara M. Jordan.—p. 326.
Appraisal of Operations for Peptic Ulcer. J. P. Shearer and D. W. Mitchell.—p. 334.
*Culpability for Delay in Management of Cancer. D. E. De Lawter.—p. 342.

Delay in Management of Cancer.—De Lawter investigated delay and culpability for delay in the diagnosis and management of cancer. The cases analyzed were obtained from records of interviews at the Warwick Memorial Clinic from 1946 to 1948. The patient was unaware that any but routine questions were being asked. The questions were as follows: 1. What was the first thing you noted? 2. When did you notice it? 3. What did you think it was? 4. What did you do about it? 5. When did you do it? 6. When did you first consult a physician or seek medical care? 7. To whom did you go (physician, radiologist, chiropractor, surgeon, etc.)? 8. What did he do about it? 9. When did he do it? 10. Was a piece of tissue removed for examination? When? 11. What did he advise? 12. Did you follow that advice? 13. Of what did the treatment consist? 14. When was treatment started? 15. By whom was treatment started? A total of 420 cases were investigated in this manner, and the impression was gained that progress is being made in reducing the delay in the diagnosis of cancer. The causes for delay between diagnosis and treatment in these cases were: (1) delay by the institute's ruling not to accept the pathologic interpretation of the biopsy obtained at another institution; (2) delay by pathology department in arriving at a diagnosis; (3) delay of specimens and reports in interdepartmental transit; (4) delay between clinic appointments and consultations because certain clinics are held only at weekly intervals; (5) delay because general physical condition of the patient would not safely permit immediate institution of treatment; (6) delay in obtaining a hospital bed or operating room for treatment, and (7) delay by patient in accepting therapy advised. The delay between completion of diagnosis and institution of treatment was excessive in 45.7 per cent of the cases studied. No case of delay was found to be specifically due to lack of finances.

Military Surgeon, Washington, D. C.

102:427-528 (June) 1948. Partial Index

Human Pathologic Anatomy of Ionizing Radiation Effects of Atomic Bomb Explosions, E. DeCoursey.—p. 427.
Derivatives of Thalamus Ventralis in Human Brain and Their Relation to So-Called Subthalamus. H. Kuhlenbeck.—p. 433.
Pathology of Peripheral Nerve Injuries. W. Haymaker.—p. 448.
Carcinoma of Lip: Preliminary Analysis of 330 Cases with Follow-Up of from 3 to 36 Years. J. L. Bernier and Mardelle Clark.—p. 474.
Present Status of Neuropsychiatry in Army. J. M. Caldwell.—p. 479.
Negative Acceleration. R. S. Shaw.—p. 483.
Auscultatory Variations in Routine Cardiac Examination. J. P. Merrill.—p. 487.
*Report of Case of Stevens-Johnson Disease. I. L. Hoffman and T. E. Stone.—p. 494.

Stevens-Johnson Disease.—Hoffman and Stone point out that Stevens and Johnson in 1922 described a "new" eruptive fever associated with stomatitis, ophthalmia, cutaneous eruption and constitutional symptoms. The authors report a case in a native-born Hawaiian aged 17. The patient had a sore throat and signs of nasopharyngitis with a temperature of 104 F. He had a nonproductive cough. The patient had three previous episodes of a similar nature involving the mouth and genitalia. With symptomatic treatment the temperature became normal on the fourth day, but on the sixth day it rose to 105 F.; it slowly decreased until it became normal eight days later. On the sixth hospital day ulcerated, membranous and vesicular lesions appeared on the tongue, gingivae and buccal mucosa. These areas became confluent and involved the lips. On the eighth hospital day vesicles appeared on the skin of the genitalia, forearms and legs with occasional discrete lesions on the trunk. Severe bilateral, conjunctivitis developed which subsided in ten days. New cutaneous lesions continued to appear. These lesions started as small erythematous macules, which became edematous, later vesicular or bullous, and still later hemorrhagic or purulent. The glans penis became involved, culminating in acute balanitis. After various laboratory examinations the case was diagnosed as one of severe Stevens-Johnson type, due perhaps to hypersensitivity to streptococcic pharyngitis. Treatment consisted in administration of penicillin by injection and spray and in ointment. During the acute stage the patient was also given sulfadiazine. Vitamins were given by injection and by mouth. The authors raise the question whether cutaneous testing with streptococcus allergens with desensitization with positive allergens might ward off future attacks.

New England Journal of Medicine, Boston

238:821-856 (June 10) 1948

Shattuck Lecture: Surgery in the Aged. C. S. Welch.—p. 821.
*Bronchiectasis Following Aspiration of Timothy Grass: Report of 8 Cases. M. G. Carter and K. J. Welch.—p. 832.
Coexisting Pulmonary Coccidioidomycosis and Tuberculosis. R. S. Study and P. Morgenstern.—p. 837.
Malaria Relapse: Report of Case Thirty-Six Years After Original Infection. D. K. Spitler.—p. 839.
Pilonidal Cyst and Sinus. J. Liburt.—p. 840.
Bronchiogenic Squamous-Cell Carcinoma of Right Upper Lobe. Kyphoscoliosis. Cor pulmonale.—p. 844.
Multiple Pulmonary Emboli. Thrombi of Right Ventricular Endocardium. Thrombosis of Left Popliteal Vein.—p. 847.

Bronchiectasis Following Aspiration of Timothy Grass.—Carter and Welch say that children often aspirate vegetable foreign bodies into the tracheobronchial tree. They report observations on 8 cases of timothy grass aspiration. These patients were observed between October 1942 and March 1947. The ages varied from 1 year and 2 months to 14 years. A well established or highly suggestive history of foreign body aspiration was obtained from 5 patients. All 5 patients had immediate symptoms. Intermittent fever was always present. Cough was prominent in 7 patients, loss of weight in 4 and abdominal pain in 1. An initial diagnosis of pneumonia was made in 5 cases. The possibility of a foreign body was suggested in only 2 of the 8 patients when first seen. When roentgenograms were obtained the diagnosis of pneumonitis, atelectasis, pneumonia or abscess was made. Prolonged symptoms ultimately led to bronchoscopy in 7 cases. In 3 of these the timothy head was recovered, but in 4 of them the foreign body was not found in spite of multiple bronchoscopies. Recovery was apparently complete in 1 patient after bronchoscopic removal of timothy. The remaining 7 required lobectomy because of bronchiectasis or pulmonary abscess. The uneventful convalescence of these 7 patients illustrate the low risk of lobectomy in young patients. Even though the presence of a foreign body cannot be established, recurrent hemoptysis from an obviously damaged lobe or known bronchiectasis should be an indication for surgical treatment when tuberculosis has been excluded.

New York State Journal of Medicine, New York

48:1201-1312 (June 1) 1948

Penicillin Treatment of Early Congenital Syphilis. D. Moon-Adams and Charlotte Marker.—p. 1245.
Obesity and Hypertension. M. B. Green and M. Beckman.—p. 1250.
Clinical Studies in Jaundice. Use of Sedimentation Rate Determinations in Convalescent Stage of Infectious Hepatitis. A. A. Goldbloom, A. Lieberson and C. D. Rosen.—p. 1254.
Psychiatric Aspects of Everyday Practice of Medicine. R. Seidenberg. —p. 1256.
Prostatectomy—Suprapubic and Transurethral. J. L. Mangiardi and A. Harris.—p. 1261.
Intestinal Obstruction Complicating Pregnancy. S. A. Siegel and N. Pleshette.—p. 1264.
*Should Cardiac Patients Be Permitted to Travel by Air? W. D. Schmidt. —p. 1267.
Combined General and Local Anesthesia for Vaginal Delivery. E. A. Graber and S. Druce.—p. 1269.
Pneumonia in Small General Hospital. P. A. Burgeson.—p. 1271.
Sulfasuxidine in Postoperative Care of Anorectal Conditions. I. Skir. —p. 1274.
Operative Treatment of Massive Rectal Prolapse. L. Breidenbach and J. W. Lord Jr.—p. 1275.
Shock in Acute Myocardial Infarction. H. Greisman and S. Z. Rosenfield.—p. 1277.
Maternal Mortality at Bronx Hospital. J. I. Kushner.—p. 1279.

Cardiac Patients and Travel by Air.—Schmidt outlines some of the dangers confronting patients with cardiac disease who travel by air. He believes that for some types of disturbed cardiovascular function travel by air can have serious consequences, while for other cases it may be perfectly harmless. The advice given to a patient with cardiac disease should be based on evaluation of the individual patient's cardiovascular status, with particular attention to the relative sufficiency of his coronary circulation and the adequacy of his pulmonary gas exchange and oxygen-carrying power of the blood.

North Carolina Medical Journal, Winston-Salem

9:233-282 (May) 1948

Psychiatry in the Modern Medical School. A. H. Ruggles.—p. 233.
Hemoglobinuric or Tubular Nephrosis (Acute Parenchymatous Nephritis). V. H. Moon.—p. 238.
Tubular Nephrosis: Clinical Consideration. G. G. Duncan.—p. 242.
Lung Abscess: Review of 49 Cases. Felda Hightower and H. H. Bradshaw.—p. 248.
Modern Conception of Liver Diseases. W. B. Dewar.—p. 252.
Chronic Glomerulonephritis Without Hypertension, Cardiac Enlargement or Retinal Changes: Case Report with Necropsy Findings. C. G. Gaddy and D. Cayer.—p. 256.
Mucocele of Vermiform Appendix with Report of 3 Cases. W. B. McCutcheon and R. D. Baxley.—p. 260.

9:283-322 (June) 1948

Changing Trends in Medicine. H. S. Willis.—p. 283.
Program of Postlobotomy Reeducation and Rehabilitation. J. A. Farmer. —p. 287.
Technic to Reduce Blood Loss During Cesarean Section. F. M. Dula. —p. 291.
Review of Treatment of Subacute Bacterial Endocarditis: Report of Unusual Case. M. T. Gilmour, H. H. Hodges and J. B. Johnston Jr. —p. 296.
Early Ambulation in Abdominal Surgery. F. M. S. Patterson and J. J. Richardson.—p. 301.
Does Effectiveness of Influenzal and Rickettsial Vaccines Justify Their Use? Bennette B. Pool.—p. 304.
Antemortem Diagnosis of Bilateral Renal Agenesis. J. U. Gunter and F. S. Oser.—p. 307.
*Atabrine [Quinacrine] in Treatment of Trichomonas Vaginitis. F. M. Dula.—p. 309.

Quinacrine in Trichomonas Vaginitis.—In search for a chemical agent with which to combat vaginitis due to Trichomonas, Dula was struck by the morphologic similarity between Trichomonas vaginalis and Giardia lamblia. From this he concluded that these two organisms might respond in a similar manner to quinacrine, which had been used successfully in infestations with Giardia. He began using insufflations of quinacrine (30 grains [2 Gm.]) in finely powdered boric acid (1 ounce [30 Gm.]). The cervix and the vagina were first mopped dry; then the mixture was blown into the vaginal canal through a speculum and a cotton-tipped applicator was used to distribute the powder over the entire vaginal surface. Four treatments were given at two day intervals. All final smears have been reported negative in the 6 cases so treated, but some vaginitis has persisted for several days after the negative smear was obtained. In 1 case severe chemical vaginitis necessitated discontinuation of the treatment after the second application. The 6 cases of vaginitis due to Trichomonas had proved refractory to other forms of treatment, and the condition had persisted for periods as long as five years. The author believes that the routine use of quinacrine is justified and may prove of great value in vaginitis due to Trichomonas.

Philippine Medical Association Journal, Manila

24:217-280 (May) 1948

Cholecystectomy and Cholecystostomy in Gall-Bladder Disease: Study of Cases in North General Hospital. F. C. Guzman and F. B. Constantino.—p. 217.
Severe Gastro-Intestinal Upset as Manifestation of Hepatic Insufficiency. R. J. Navarro and J. A. Silva.—p. 221.
Cardiorrhaphy: Case Report with Successful Recovery. C. H. Abaya and R. De La Cuesta.—p. 229.
Lingual Thyroid. P. M. Recio and C. V. Yambrao.—p. 235.
Management of Five Cases of Aneurysm at North General Hospital. Angel Reyes and M. De Guzman.—p. 241.
Hearing Aids and Lip Reading for Rehabilitation of Hard of Hearing and Deafened Persons. Isabel Concepcion.—p. 245.

Plastic & Reconstructive Surgery, Baltimore

3:245-384 (May) 1948

*Preparation of Granulating Wounds for Grafting (A Method). J. T. Mills, J. B. Patterson and R. E. House.—p. 245.
Plastic Surgery in Facial Cancer. Claire L. Straith.—p. 262.
Eyelid Reconstruction in Blinded. S. M. Dupertuis.—p. 269.
Establishing Preserved Cartilage Bank. J. B. Brown and M. DeMere. —p. 283.
Surgical Management of Cutaneous Postdiphtheritic Ulcers. H. P. Royster.—p. 294.
Experimental and Clinical Studies of Reduced Temperatures in Injury and Repair in Man: III. Direct Effect of Cooling and Freezing on Various Elements of Human Skin. H. Baxter and M. A. Entin. —p. 303.
Study of Vitality of Tissue Transplants by Means of Radioactive Phosphorus: Preliminary Report. C. L. Kiehn, H. L. Friedell and W. J. MacIntyre.—p. 335.
Phagedenic Ulcer of Penis with Plastic Repair. G. B. O'Conner.—p. 340.
Dermoid Cysts of Nose. A. D. Davis and R. E. Berner.—p. 345.
Auriculo-Mastoid Tube Pedicle for Otoplasty. D. N. Steffanoff.—p. 352.
Right and Wrong in Rhinoplastic Operations. A. Rethi.—p. 361.
Operative Treatment of Retroauricular Opening Remaining After Radical Operation of Ear. A. Rethi.—p. 371.

Preparation of Granulating Wounds for Grafting.—Outlining the method by which large infected wounds are transformed into clean ones preparatory to grafting, Mills and his co-workers say that the usually malodorous ointment dressing is removed and a wound culture and a photograph are taken; then a complete blood count, urinalysis, blood Kahn test, determination of plasma protein, albumin and globulin and blood typing are ordered. All crusts and necrotic tissue are removed; the surrounding skin washed and shaved and a single layer of nonoverlapping 40 by 44 mesh plain sterile gauze is applied. This is followed by wet saline dressings. Evaporation and contamination are minimized by wrapping the part in sterile cellophane. The saline dressings are then changed every four hours down to the fine mesh gauze with sterile technic. The fine mesh gauze is usually left undisturbed for one week. During this interval the patient's temperature usually returns to normal, his appetite improves and the blood picture is brought back to near normal by blood transfusions. By the third hospital day the wound culture report is available, and, if this reveals pathogenic gram-positive cocci, penicillin may be added to the saline solution. If pathogenic gram-negative bacilli are reported, nitrofurazone solution may be used. Neither is recommended for routine use. On the seventh hospital day the fine mesh gauze is removed, all exuberant granulations cut down to a firm base and fresh mesh gauze reapplied and wet saline dressings resumed. By the tenth hospital day the granulating bed is usually ready for skin grafting. The authors stress the advantages of the fine mesh gauze treatment, pointing out that it allows the drainage of exudate into the overlying wet dressings which can be changed frequently and relatively painlessly. Removing the granulations prior to the day of skin grafting results in a cleaner wound, a more receptive bed and minimizes bleeding beneath the graft. Changing the fine mesh gauze two or three days prior to grafting likewise minimizes oozing from the granulating wound when the gauze is removed the day the grafts are placed. After skin grafting fine mesh gauze allows the spread of epithelium with a minimum of disturbance.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

67:405-572 (April) 1948. Partial Index

In Vivo Observations on Distensibility of Femoral Venous System. R. S. Alexander.—p. 410.
*Circulating Antibodies in Vitamin Deficiency States: II. Thiamin and Biotin Deficiencies. B. B. Carter and A. E. Axelrod.—p. 416.
Subtenolin. Antibiotic from Bacillus subtilis. I. Bacteriologic Properties. H. N. Hirschhorn, M. A. Bucca and J. D. Thayer.—p. 429.
Results of Heterophile Antibody Agglutination and Kahn Tests in Patients with Viral Hepatitis. W. P. Havens Jr., J. M. Gambescia and Marjorie Knowlton.—p. 437.
Effect of Sodium Bicarbonate and Ammonium Chloride on Ascorbic Acid Metabolism of Adults. Betty E. Hawthorne and Clara A. Storvick.—p. 447.
*Cultivation of Rickettsia prowazeki in Dead Chick Embryos. Esther Rabinowitz, M. Aschner and N. Grossowicz.—p. 469.
Inhibition of Multiplication of Influenza Virus by Tannic Acid. R. H. Green.—p. 483.
Relationship Between the pH of Duodenal Content and Pancreatic Secretion. I. J. Pincus, J. E. Thomas, D. Hausman and P. O. Lachman.—p. 497.
Effect of Tween 80 on Certain Strains of C. diphtheriae. Martha K. Ward.—p. 527.
Bacillomycin: Antibiotic from Bacillus subtilis Active Against Pathogenic Fungi. M. Landy, G. H. Warren, S. B. Rosenman and L. G. Colio.—p. 539.
*Comparison of Nutritive Value of Egg Proteins and Their Amino Acid Content. W. C. Hess, E. H. Kramke, J. C. Fritz and H. W. Howard.—p. 552.

Antibodies in Vitamin Deficiency States.—Carter and Axelrod studied hemagglutinin production in response to inoculation with human erythrocytes in thiamin-deficient and biotin-deficient rats. A moderate impairment of antibody response was observed in both deficiencies.

Cultivation of Rickettsia in Dead Chick Embryos.—Rabinowitz and her co-workers found that chick embryos which were killed by chilling on the third day of development and were thereafter maintained at 37 C. for sixteen days still contained living cells. Rickettsia prowazeki multiplied abundantly in dead chick embryos which contained surviving cells. Since the growth period for rickettsia in dead embryos may easily be extended to sixteen days, or double the time customary in work with living embryos, even minute inoculums have a chance to multiply significantly. Inoculums too small to yield a positive smear after the usual seven days' incubation in the living embryos yielded smears containing numerous rickettsia after fourteen days' incubation in the dead embryos.

Nutritive Value of Egg Proteins.—Hess and his co-workers prepared whole egg, whole white and yolk proteins and analyzed them for nitrogen, sulfur, cystine, cysteine, methionine, phenylalanine, tryptophane, threonine, histidine, lysine and arginine. The same proteins were used in feeding experiments with young rats to determine their protein efficiency values. In addition three commercial egg proteins were tested similarly. The authors found the protein efficiency ratio of the whole white protein to be higher than that of either the whole egg or the yolk proteins. The protein efficiency ratio of the commercial whole white protein was almost as high as that of the laboratory prepared sample. The protein efficiency ratio of commercial whole egg protein was markedly lower than that of the laboratory prepared sample. The amino acid content of all the whole egg proteins was similar with the exception of the cystine content of the commercial samples, which was lower than that of the laboratory samples.

Psychiatric Quarterly, Utica, N. Y.

22:1-174 (Jan.) 1948

Psychosomatic Aspects of Korsakoff Syndrome. G. M. Davidson.—p. 1.
Song of the Sirens. G. Roheim.—p. 18.
Critique of Intravenous Barbiturate Usage in Psychiatric Practice. W. E. Burnett.—p. 45.
Biologic Purpose of the Dream. M. Brody.—p. 65.
Myth of a New National Disease. E. Bergler.—p. 66.
Psychotherapy in Veterans Administration Mental Hygiene Clinic. N. Blackman.—p. 89.
Analysis of Presumptively Telepathic Dream. J. Eisenbud.—p. 103.
Use of Bulgarian Belladonna Root in Treatment of Huntington's Chorea. M. Lazar.—p. 136.
Clinical Investigation of Simple Schizophrenia. O. Kant.—p. 141.

Rhode Island Medical Journal, Providence

31:291-348 (May) 1948

Blood and Plasma in Surgical Emergencies. F. A. Simeone.—p. 291.
Fractures of Shaft of Tibia: Types and Treatment (Bone Grafts and Non-Union). R. T. Henry.—p. 299.
Subacute Bacterial Endocarditis: Report of Case Treated Successfully with Penicillin. J. Greenstein.—p. 302.

31:349-412 (June) 1948

Extra-Mural and Intra-Mural Practice—Then and Now. S. A. Levine.—p. 363.
Medical Leadership. A. R. Ruggles.—p. 369.
Profound Prerenal Azotemia Resulting from Pyloric Stenosis: Report of Case with Postoperative Followup. A. T. Beck.—p. 372.

Tennessee State Medical Assn. Journal, Nashville

41:155-194 (May) 1948

The Tennessee State Medical Association and Postgraduate Medical Instruction. F. B. Bogart.—p. 155.
Newer Concepts of Management of Peptic Ulcer. H. Acuff.—p. 157.
Report on National Health Assembly. E. F. Stegen.—p. 164.

41:195-236 (June) 1948

Prognosis in Carcinoma of Uterine Cervix. A. N. Arneson.—p. 195.
Psychosomatic Disorders. C. W. Miller Jr.—p. 206.
*Use of Testosterone in Women with Recurrent Breast Cancer. M. B. Davis.—p. 213.

Testosterone for Women with Recurrent Breast Cancer.—Davis cites histories of 7 patients with recurrent cancer of the breast in whom he resorted to the use of testosterone propionate. He concluded that testosterone is of benefit in cases in which no further roentgen therapy can be used. None of these patients were apparently made worse by the use of this drug. It proved of value in the presence of pulmonary and particularly of skeletal metastasis. All of the women, with one exception, had a feeling of well-being and relief from pain which could not have been all psychic. It seems that, along with high voltage therapy, roentgen or surgical castration, testosterone is another weapon against one of women's most relentless enemies.

United States Naval Med. Bulletin, Washington, D. C.

48:355-502 (May-June) 1948. Partial Index

Medical Matériel Logistics in the United States Navy. M. K. Cureton.—p. 353.
Production of Anti-Rh Serums from Placenta Tissue of Sensitized Women. J. J. Engelfried and F. R. Henry.—p. 370.
Use of Pedicle Skin Grafts in Repair of Surface Defects of the Lower Extremities. W. Requarth.—p. 373.
Present-Day Concepts of Epidemiology. George E. Foley.—p. 386.
Dermatitis Due to Preparation and Administration of Penicillin Solution. W. C. Marsh and W. N. New.—p. 391.
Pterygium: A Simple Efficient Method of Treatment. H. G. Bullwinkel.—p. 395.
Streptothricosis. W. L. Schafer.—p. 399.
Prolonged Laboratory Observations on Clinical Cases and Carriers of "Shigella Flexneri III" Following an Epidemic. F. R. Philbrook, L. A. Barnes, W. J. McCann Jr. and R. R. Harrison.—p. 405.
Treatment of Fractures of Edentulous Mandibles. S. C. Liedman.—p. 415.
Sulfadiazine Anuria. C. F. Storey and J. A. Fowler.—p. 448.
*Rupture of Spleen in Infectious Mononucleosis. S. P. Hicks.—p. 460.

Rupture of Spleen in Mononucleosis.—Hicks reports the case of a sailor aged 18 years, in whom rupture of the spleen occurred in the presence of an unsuspected infectious mononucleosis. The patient recovered after splenectomy. The diagnosis was made from pathologic examination of the spleen, the presence of atypical lymphocytes in the blood and a sheep cell agglutination titer in the patient's serum of 1:112, which was unchanged by adsorption on guinea pig tissue (Davidsohn test). Rupture of spleen complicating infectious mononucleosis has recently been brought into prominence by a report of 7 cases from the Army Institute of Pathology. Four cases were fatal; 3 patients recovered after splenectomy. Of 3 cases reported in the literature previous to that time 2 were fatal. In 2 other previously reported cases recovery followed splenectomy. The possibility of a splenic rupture should be kept in mind in the management of infectious mononucleosis for two reasons: (1) It has carried a high mortality thus far, and (2) rupture appears to occur after trivial injury, even after palpation of the spleen.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

29:1-90 (Feb.) 1948

Experimental Production and Development of Diffuse Hepatic Fibrosis ("Portal Cirrhosis"). L. E. Glynn, H. P. Himsworth and O. Lindan. —p. 1.
Survival of Virus of Foot-and-Mouth Disease in Blood at 37 C. J. B. Brooksby.—p. 10.
*Enhancement of Bacterial Infections by Adrenaline. D. G. Evans, A. A. Miles and J. S. F. Niven.—p. 20.
Epizootic Behavior of Mouse-Pox (Infectious Ectromelia). F. Fenner. —p. 69.

Enhancement of Bacterial Infections by Epinephrine.—Evans and his associates point out that after the observation that an intramuscular injection of epinephrine in a man had apparently induced Clostridium welchii gas gangrene at the injection site, Cooper, in 1946, demonstrated a great decrease in the minimal lethal dose of Cl. welchii when washed baccilli were injected into the muscle of guinea pigs together with epinephrine. It was thus demonstrated that epinephrine enhances the infectivity of Cl. welchii. Evans and his associates investigated the nature of this enhancement in experimental infections with clostridia and with a number of pathogenic aerobic bacteria. They found that injection into the skin or thigh muscles of guinea pigs of 2 micrograms of epinephrine renders these tissues more susceptible to some microbial infections. The resulting enhancement of infection by strains of various pathogens tested was as follows: Clostridium septicum and Cl. welchii, 100,000 fold; Bacterium coli, Proteus vulgaris, Pseudomonas pyocyanea and Streptococcus pyogenes, 100 to 10,000 fold; Corynebacterium diphtheriae and Staphylococcus aureus, 10 to 100 fold; Bacterium subtilis, Brucella abortus, Clostridium novyi and Streptococcus pneumoniae, about 10 fold; Shigella flexneri, Shigella sonnei and Vibrio comma, 2 to 5 fold. Infections with strains of Clostridium histolyticum and Clostridium tetani were not enhanced. In the skin of the rabbit, Staph. aureas was enhanced 100 fold, vaccinia virus 10 fold and Haemophilus pertussis not at all. Epinephrine enhances chiefly infection, not intoxication. The temporary failure of mobilization of bactericides in epinephrine-treated tissue appears to be the chief factor in the enhancement of infections by epinephrine. There is some evidence of an early removal of bacteria from the injection site which is retarded by epinephrine, with a consequent increase in the severity of the local lesion. The removal of certain vital dyes is also retarded by epinephrine.

British Journal of Radiology, London

21:265-318 (June) 1948

Effect of Beta Rays on Cells Cultivated in Vitro. Ilse Lasnitski.—p. 265.
Treatment of Cancer of Maxillary Antrum by Radium. Margaret C. Tod.—p. 270.
Theoretical Study of Results of Ionization Measurements in Water with X-Ray and Gamma-Ray Beams. L. F. Lamerton.—p. 276.
Plain Radiography of Skull in Diagnosis of Intracranial Tumours. D. Stenhouse.—p. 287.
Simple Apparatus for Making Rapid Serial Radiographs of Small Objects. G. E. H. Foxon.—p. 301.
Some Aspects of Radiology in War-Time Germany. G. E. Donovan. —p. 305.
Carcinoma of Duodenum. K. Mendl and C. H. Tanner.—p. 309.

British Medical Journal, London

1:1015-1060 (May 29) 1948

Pneumoconiosis of Coal-Miners. C. M. Fletcher.—p. 1015.
*Deficiency Scrotal Dermatitis in P.O.W.s in Far East. A. W. Frankland.—p. 1023.
*Streptomycin in Bubonic Plague. C. Haddad and A. Valero.—p. 1026.
Solitary Myeloma of Mandible. R. Spitzer and L. W. Price.—p. 1027.
Significance of Gram Test for Bacteria in Relation to Penicillin Bacteriostasis. Mariam George and K. M. Pandalai.—p. 1028.
Lugol's Solution in Failing Lactation. D. P. Nicholson.—p. 1029.

Deficiency Scrotal Dermatitis in Prisoners of War.—Frankland reviews observations on deficiency scrotal dermatitis seen in Allied prisoners of war in the Far East. From July 1 to Dec. 31, 1942, 1,371 persons were admitted to the skin ward at the main hospital for British personnel. Of these, 551 were primarily admitted for scrotal dermatitis. The first symptom noticed was an irritation of the scrotum, always worse at night. In its mildest form the scrotal dermatitis would last for only a few days and then would relapse and last days or weeks. Heavy work, heat and illness were the chief precipitating causes of the onset or a relapse. The author describes the symptoms of four different forms of the disease: the mild acute dry form, the severe chronic dry form, the chronic wet form and the ulcerated and edematous form. Associated vitamin deficiency diseases included oral lesions such as deficiency scrotal dermatitis, angular stomatitis, sore lips and sore tongue. Common cutaneous lesions were superficial desquamation on the nasolabial folds and on the skin adjacent to the pinna. Painful or burning feet and ocular manifestations such as granular cornea and retrobulbar neuritis were other manifestations of vitamin deficiency. It was noted that no cases of scrotal dermatitis occurred when the riboflavin content of the diet was maintained at a sufficiently high level. Riboflavin preparations seem to have a curative effect in cases of mild disease.

Streptomycin in Bubonic Plague.—Haddad and Valero say that in 1947 bubonic plague broke out in Haifa, Palestine. Sulfonamide drugs, especially sulfadiazine, were administered as a routine in all cases. When possible the initial dose was 2 Gm. given orally, followed by 1 Gm. every four hours during the acute stage. Later, smaller quantities were given until the bubo healed. Results were favorable on the whole, but the condition of 3 patients admitted when seriously ill deteriorated rapidly. They were given 200 or 300 mg. of streptomycin every three hours, and in 1 case it was continued for eleven days. The 3 patients recovered after this treatment, but although the effect of streptomycin on the general condition of the patients was remarkably good, the buboes appeared to be uninfluenced when treated late in the disease. This was true also of the sulfonamide drugs. In most cases incision and drainage were necessary to bring about resolution.

J. of Neurology, Neurosurgery & Psychiatry, London

11:73-142 (May) 1948

Primary Sensory Neuropathy with Muscular Changes Associated with Carcinoma. D. Denny-Brown.—p. 73.
*Fantom Limbs. W. R. Henderson and G. E. Smyth.—p. 88.
Pain Sensibility in Deep Somatic Structures. W. H. Feindel, G. Weddell and D. C. Sinclair.—p. 113.
Physiologic Mechanisms Underlying Electric Activity of Brain. Mary A. B. Brazier.—p. 118.
Role of Acetylcholine in Synaptic Transmission: Critical Review. D. Whitteridge.—p. 134.

Fantom Limbs.—Observations by Henderson and Smyth were made in prisoner of war hospitals in Germany. Amputation was nearly always a sequel to gunshot wounds and was performed usually within the first week or two after wounding. Observations on 300 cases revealed that a fantom limb is a natural and almost universal sequel to amputation. Three kinds of sensory phenomena may appear; (*a*) mild tingling, which forms the basic part of the fantom in nearly every case and probably arises in the cerebral cortex; (*b*) stronger pins and needles induced momentarily by touching a neuroma in the stump; (*c*) occasionally, superadded sensations which may be disagreeable and painful and probably have a psychogenic basis. Special attention has been given to what is termed the "natural fantom" by which is meant the basic sensory tingling, its motor counterpart, the impression of willed movements and other features. The spontaneous tingling appears in those parts (chiefly thumb, index and great toe) having the largest cortical representation, and the belief that it originates in the sensorimotor cortex is strengthened by its close functional relationship with the motor phenomena. The willed movements also are stereotyped; they are associated with observable contraction of the appropriate muscles in the stump, and their behavior reflects the fundamental importance of sensation in initiating and controlling voluntary movements. The fantom can be induced and intensified by reflex factors (for example, micturition) acting centrally. The behavior and evolution of the "natural fantom" is as if the related cerebral centers were for a time in a state of heightened activity, the later subsidence of which results in telescoping of the fantom and its eventual fading from consciousness, and perhaps also in the disappearance from subconscious levels of its neuronal patterns. Unusual superadded sensations sometimes appear which are peculiar to the patient and are believed to be psychogenically determined from the highest cerebral level. The authors stress that a fantom cannot be considered as a single entity, for its manifestations may be derived from three levels in the nervous system (psychogenic, sensorimotor cortex and peripheral nerve). It is important before operating to determine to which of these the patient's complaints are most attributable. Peripheral operations on the stump, apart from neurectomy for a sensitive neuroma, usually have no effect on the fantom.

Lancet, London

1:817-852 (May 29) 1948

*Post-Hepatitis Cirrhosis. Sheila Sherlock.—p. 817.
*Bronchiectasis Simulating Chronic Bronchitis: Study of 46 Cases. J. D. H. Wearing.—p. 822.
Protein Katabolism in Uremia: Effects of Protein-Free Diet, Infections, and Blood-Transfusions. J. G. G. Borst.—p. 824.
Mercury in Urine of Children with Acrodynia. J. Warkany and D. M. Hubbard.—p. 829.
Photo-Electric Drop Recorder for Investigating Cardiovascular Effects of Drugs in Man. R. H. Goetz.—p. 830.
Unstable Semilunar Bone. H. Davies.—p. 831.

Posthepatitis Cirrhosis.—Sherlock says that although acute hepatitis is normally followed by complete recovery, she has observed 9 patients in whom hepatic cirrhosis could be related to a preceding acute hepatitis. In 6 the hepatitis was of the simple "infective" type; in 3 it was of the "serum" variety following arsenotherapy for syphilis. The 9 patients have been followed up to five years from the development of the cirrhosis. The results of serial aspiration liver biopsies and hepatic function tests have been correlated with the clinical course of the disease. In 3 patients the hepatic lesion was well compensated and produced no symptoms, and hepatic cell necrosis was not histologically demonstrated. In 2 patients hepatic cell necrosis and degeneration were prominent; there was slight jaundice; abnormalities were found in most of the hepatic function tests. One patient died of hepatic failure. In 4 patients hepatic fibrosis was prominent and the symptoms and signs were those of portal circulatory obstruction; biochemical changes were slight or absent. Two patients died of gastrointestinal bleeding. Although the 9 cases of posthepatitis necrosis were detected in liver biopsies on 120 patients with hepatitis, this does not reflect the true incidence of this complication, since the present group is partly selected.

Bronchiectasis Simulating Chronic Bronchitis.—Wearing says that in 46 of 214 patients with symptoms suggesting chronic bronchitis bronchography revealed bronchiectasis. In 26 of the 46 cases in which bronchiectasis was discovered there was a past history of pneumonia. Pleurisy had occurred alone in 2 cases. Treatment in a sanatorium had been received by 3 patients, but no tubercle bacilli were found. Productive cough and dyspnea were the presenting symptoms in all 46 cases. Secondary symptoms were pain in the chest, sweats, loss of weight and hemoptysis. The cough was intermittent, but except in the winter months it was not severe enough to cause disability. Diminished respiratory excursion was general. There were 8 cases with clubbing of fingers. The signs and symptoms in the 46 patients with bronchiectasis in no way differed from those in the 168 patients with chronic bronchitis. There were 31 cases of cylindrical, 3 of varicose and 12 of saccular bronchiectasis. The appearances of cylindrical bronchiectasis seen in the plain roentgenogram were not sufficiently characteristic to enable a firm diagnosis to be made. Bronchography is essential to confirm and show the extent of the bronchiectasis. The bronchi in unresolved pneumonia at first undergo reversible mechanical dilatation, which may later be rendered irreversible by secondary infection of the bronchial wall. A bronchus may remain dilated for several months and yet be capable of returning to its original diameter.

Medical Journal of Australia, Sydney

1:609-636 (May 15) 1948

Diagnosis of Gastric Disease: Should Radiology of Stomach Be Abandoned? V. J. Kinsella.—p. 609.
Mediastinal Emphysema. V. L. Collins.—p. 614.
Hyperplasia of Cardiac Muscle Fibres. T. E. Lowe and E. W. Bate.—p. 618.

1:637-664 (May 22) 1948

Goiter Studies: I. Incidence of Endemic Goiter in Three Areas in Australia. F. W. Clements.—p. 637.
Sinusitis and Short-Wave Therapy. W. Smith.—p. 640.
Investigation of Carbohydrate Metabolism in Normal Pregnancy. Sara Weiden.—p. 646.

Acta Paediatrica, Stockholm

35:1-188 (No. 1 and 2) 1948. Partial Index

Comparison Between Sedimentation Rates of Children in Day Nurseries and Children Cared for in Their Homes. E. Frissell.—p. 1.
Infantile Cortical Hyperostoses. W. van Zeben.—p. 10.
Primary Hemolytic Anemia in Infants. G. Klackenberg and S. Vendel.—p. 21.
Nosocomial Chickenpox: Some Observations and Attempts of Prophylaxis. P. Anchersen.—p. 72.
*Duration of Immunity After Vaccination with BCG. O. Walsz-Höckert.—p. 89.
Rheumatic Pneumonia. E. Van Wijk.—p. 108.
*Studies on Diphtheria: I. Decrease of Natural Antitoxic Immunity Against Diphtheria. B. Vahlquist.—p. 117.
Id.: II. Immunization Against Diphtheria in Newborn Babies and in Infants. B. Vahlquist, U. Murray and N. G. Persson.—p. 130.
Id.: III. Duration of Immunity Against Diphtheria Following Vaccination as Compared with that Following Clinical Disease and Carrier State. B. Vahlquist and G. Hackzell.—p. 149.

Duration of Immunity After Vaccination with BCG.—Walsz-Höckert gave tuberculin tests to 1,702 children who had been vaccinated with BCG from six months to eight years before. Half of those tested were less than 3 months old and three fourths less than 3 years of age when first vaccinated. The test reaction was judged as negative when a Mantoux test with 1 mg. did not produce a 10 by 10 mm. area of redness and infiltration within seventy-two hours. The tuberculin sensitivity had disappeared after two to three years in 10 per cent of the children and after five or six years in about 20 per cent. A tuberculous superinfection definitely reacts on the tuberculin sensitivity. In order to insure the protective effect of BCG, Wallgren had suggested that tuberculin tests be carried out at least at 3, 7, 10, 15 and 20 years of age. A tuberculin test every year or every other year provides greater certainty. Of the 1,702 children followed up in 6 primary tuberculosis developed. In 5 cases the disease had an extremely benign course. These 6 comprise 5.5 per cent of the 108 children who were definitely exposed to virulent tuberculous infection. No deaths occurred.

Decrease in Immunity Against Diphtheria.—Vahlquist says that during the years preceeding World War II the frequency of diphtheria was low in many countries of Europe. Among the exceptions were England and Germany. In Germany it was not only high but steadily increasing. During the war there was over the entire continent a general increase in diphtheria. The heavily infected German troops, often carrying diphtheria, probably played an important role in transmitting the disease to the populations of occupied countries. Other factors have been of decisive importance. The results of Schick tests and of antitoxin determinations in Sweden and other European countries clearly demonstrate that the situation in regard to natural immunity against diphtheria is most unsatisfactory. In Sweden the number of Schick-negative persons among nonimmunized adults does not exceed 10 per cent. As a consequence the newborn only infrequently demonstrate that passive immunity which was formerly assumed to be the rule. In spite of the unfavorable immunologic situation an epidemic of diphtheria in Sweden during the war rapidly subsided. Large scale immunization contributed to this outcome.

Anales de la Facultad de Medicina, Lima

29:311-368 (Oct.-Dec.) 1946. Partial Index

*Action of Cocaine Against Fatigue and Habituation to Coca in Peru. F. Cabieses Molina.—p. 316.

Coca Chewing in Peru.—The author reviews the literature on coca chewing in Peru, a problem that concerns more than 15,000,000 Andeans. He reports his own observations on the physiology of the Andeans. Much speculation on the toxicity of coca has been made. The conception of the toxicity of coca is erroneous, since it is based on the observations on the toxicity of cocaine when administered by parenteral route to persons living at sea level. In judging the toxicity of coca for the Andeans several factors must be considered: The Andeans constitute a climaticophysiologic variety of the human race. They live at altitudes between 12,000 and 17,000 feet (3,658 to 5,182 meters). They depend on half as much oxygen in the atmosphere as is available in the atmosphere of persons living at sea level. They are not great eaters, but are strong and athletic. Their sympathetic nervous system is constantly at a high tonus. The p_H of their blood is near the limit of alkalinity. Their reactions to drugs stimulating the nervous system are quite different from those of peoples at sea level. There is a direct relationship between altitude and the percentage of coca chewers. The higher the settlement of the mountaineer population the greater the percentage of coca chewers. Coca chewers consume a daily dose of coca which varies between 42 and 91 mg., a dose which is atoxic when administered by mouth. Chewing lasts for several hours; consequently the alkaloid enters the blood in extremely small doses. Cocaine is destroyed in the liver before passing to the blood. The alkalinity of the blood is another factor in destroying the alkaloid. Although definite conclusions cannot be reached, the following facts are obvious: Coca has a favorable effect on fatigue and on metabolism of respiration. The Andeans have a racial resistance to the drug, which is both harmless and necessary for them at the great altitudes of the Andes. There is no habituation to coca chewing. The custom is abandoned when the Andeans work at sea levels. Coca chewing does not cause any degeneration of the race.

Klinische Wochenschrift, Heidelberg

26:161-192 (March 15) 1948. Partial Index

Results of Supradiaphragmatic Resection of Sympathetic and of Splanchnic Resection According to Peet in Hypertension. R. Zenker and H. Lohr.—p. 170.

*Transition of Chronic Epidemic Hepatitis to Hemolytic Jaundice. K. Voit. —p. 176.

Pathologic Aspects of Nutritional Disturbances in Nurslings. W. Müller. —p. 177.

Action of Urethane (Ethyl Carbonate) on Blood and Erythropoietic Tissues: Experiments on Animals. W. Tischendorf and E. Fritze. —p. 179.

Transition of Chronic Epidemic Hepatitis to Hemolytic Jaundice.—Voit points out that Kalk in a recent report on various conditions resulting from the chronic form of epidemic hepatitis suggested that this hepatic disorder may terminate in a hemolytic jaundice. On the basis of his own observations and those of his associate, Gerstenberg, Voit is inclined to accept Kalk's suggestion. The investigation of blood changes in patients who had had hepatitis some time before but who had occasional recurrences of jaundice revealed that persisting urobilinuria and indirect bilirubinemia were always accompanied by a reduction in the resistance of erythrocytes. The hemoglobin metabolism was investigated in 4 cases, in which clinical signs of impaired hepatic function were no longer present, but in which enlargement of the spleen, decrease in the resistance of erythrocytes and indirect bilirubin reaction suggested transition into hemolytic jaundice. The results obtained indicate that transition of chronic epidemic hepatitis into hemolytic jaundice is highly probable.

Medicina, Buenos Aires

8:1-90 (Feb.) 1948. Partial Index

*Course and Treatment of Ventricular Paroxysmal Tachycardia. F. C. Arrillaga and L. de Soldati.—p. 1.

Relation Between Insufflated Air in Pleural Chamber and Diminution of Pulmonary Volume. A. E. Bence, A. Lanari and E. Rodriguez. —p. 16.

*Thiouracil and Acute Atrophy of Liver. E. Trucco, J. Argonz and M. Gambin.—p. 55.

Ventrical Paroxysmal Tachycardia.—Arrillaga and Soldati report clinical and electrocardiographic observations on 6 instances of paroxysmal ventricular tachycardia in 4 patients. The paroxysms were controlled three times in one patient and once in another patient. In both cases the so-called post-tachycardic electrocardiographic syndrome, consisting of depression of the S-T segment, negative T wave and, less frequently, enlargement of the Q-T interval, was observed. The post-tachycardic syndrome assumed different characteristics, depending on the direction of the electric axis during the paroxysm, that is, on the location of the focus originating the ectopic stimuli. The syndrome was reversible in a short time in one patient. It was related neither to the duration of tachycardia nor to the previous existence of organic cardiopathy. In one patient the syndrome persisted for more than two months, probably due to ischemia of variable intensity in the myocardium. Practically all drugs known to be of value in the condition were resorted to in the treatment of these patients. Quinidine injected intravenously was the only effective drug. One patient who did not react to quinidine in large doses reacted favorably to intravenous injection of 0.50 Gm. of quinidine when the injection was given one hour and a half after an intravenous injection of 4 cat units of digitalis. A large percentage of patients with paroxysmal ventricular tachycardia do not have organic heart disease before the attack, but the disease may develop afterward. The absence of heart disease before the attack and the duration of the attack do not necessarily modify the grave prognosis of paroxysmal ventricular tachycardia.

Thiouracil and Acute Atrophy of the Liver.—The authors report a woman with exophthalmic goiter who was given thiouracil as preoperative treatment. The drug was administered in doses of 0.60 Gm. for seventeen days and in doses of 0.20 Gm. for eight days, a total of 11.80 Gm. being administered in twenty-five days. The surgical intervention did not present any difficulty, and the postoperative stage was passed without complications. Eight days after the operation the patient exhibited mental agitation and confusion. She died on the thirteenth day after the operation. Necropsy revealed acute yellow atrophy of the liver.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

92:1129-1200 (April 17) 1948. Partial Index

Venereal Diseases Among the Armed Forces. J. van der Veen.—p. 1134.

Eryemthema of the Ninth Day. K. E. H. P. Neering.—p. 1145.

*Cowpox. W. Kortmann.—p. 1158.

*Epidemic of Cowpox After Vaccination. R. J. Hamburger.—p. 1161.

Cowpox.—Kortmann presents the case of a man, aged 50, who presented symptoms which were finally identified as caused by cowpox infection. He had had contact with cows which had cowpox. A sulfonamide preparation was given in order to counteract the secondary infection. Recovery was uneventful. After this case the author observed a number of other cases of infection with cowpox in milkers. These patients had either not been vaccinated at all or they had been vaccinated more than twenty years before.

Epidemic of Cowpox After Vaccination.—Hamburger reports a family in which 5 persons became ill in a comparatively short time. The oldest son in this family had been vaccinated while in military service. He had felt rather ill and was given a furlough when he had not yet completely recovered. He helped with the milking, and within a week all 27 cows contracted cowpox. Lymph obtained from these cows was found to contain vaccine virus. The persons who came in contact with the animals, including 2 milkers who came from outside the family group, exhibited symptoms indicative of cowpox. The disorder took a favorable course in all the patients.

92:1201-1288 (April 24) 1948

Regarding the "Firm Pancreas." P. H. Hartz.—p. 1217.

Morphologic Aspects of Renal Lesions Caused by Sulfonamides. G. Bras and Lie Kian Joe.—p. 1222.

*Ovarian Abscess. T. J. van Sante.—p. 1227.

Ovarian Abscess.—Van Sante investigated all patients with pathologic processes of the uterine adnexa that had been treated at his hospital between 1930 and 1946. The total of 944 cases of adnexitis included 120 cases of a tuberculous nature. Of the 824 nontuberculous infections, 467 were treated conservatively; of 357 patients who were operated on, 115 were found who had an ovarian abscess, and 2 additional ovarian abscesses were found at necropsy in women who had not been operated on. Thus ovarian abscesses accounted for 14.2 per cent (117 of 824) of the nontuberculous infections of the adnexa. The etiology of the ovarian abscess differs somewhat from that of pyosalpinx. Streptococci, staphylococci or colon bacilli are generally found. The abscess frequently develops by continuation, and a recently ruptured follicle often plays an important part in this process. Infection by the hematogenous or lymphogenous route is much less frequent. As regards treatment, the pyo-ovarium differs from the pyosalpinx in that it is less responsive to conservative treatment and generally requires surgical intervention.

Nordisk Medicin, Stockholm

38:1111-1162 (June 4) 1948

Hormone Treatment in Climacteric Disturbances. F. Bøe.—p. 1111.
Citrin and Ascorbic Acid Administration in Chronic Polyarthritis or in Toxemia of Pregnancy. B. Ekman.—p. 1112.
Erosion of Neck of Uterus and Carcinoma. W. Munck.—p. 1115.
Frequency of Uterine Malformations and Their Relation to Fertility and Delivery. S. Palmberg-Nyberg.—p. 1117.
Preoperative Estrogenic Treatment in Complete Retrovaginal Rupture. J. Løvset.—p. 1121.
Circulatory Disturbances in Supine Position in Pregnancy. J. Walde. —p. 1122.
*Adenoma Tubulare Testiculare Ovarii. H. Anker.—p. 1124.
Shoulder Delivery in Head Presentation. J. Løvset.—p. 1127.
Mixed Tumor of Mammary Gland. R. Anda.—p. 1128.

Adenoma Tubulare Testiculare Ovarii.—Anker says that adenoma tubulare testiculare ovarii is the least common of the ovarian tumors called arrhenoblastomas, with more or less hormonal action ascribed to interstitial cells of the same appearance and the same biologic action as the Leydig cells in the testes. His patient was a primipara aged 34, with oligomenorrhea and, in the last nine months, amenorrhea, slight virilization in the form of growth of hair of masculine type and vague pain on the right side of the abdomen. A solid tumor of the size of a hen's egg was removed from the right ovary and found to be a typical adenoma tubulare testiculare. The menses returned four weeks after extirpation of the tumor. The abnormal growth of hair disappeared. After about a year the patient gave birth to a healthy child. This is believed to be the tenth case reported in the literature.

38:1163-1210 (June 11) 1948. Partial Index

Heart Catheterization. Review. L. Werkö and H. Lagerlöf.—p. 1163.
Coronary Thrombosis and Its Treatment. A. Aubert.—p. 1167.
Cholesterin in Diseases of Heart. G. Biörck and H. Karni.—p. 1175.
*Serum Proteins in Diseases of Heart. G. Biörck, S. Hedlung, J. Karnell and H. Karni.—p. 1179.
Afferent Impulses from Heart. Y. Zotterman.—p. 1182.

Serum Proteins in Diseases of Heart.—Biörck and his associates studied serum proteins in 147 cases of cardiac disease and found that several factors play a part in protein metabolism and determination of the serum protein. The presence of hepatic injury seems to be important. Low serum protein values, low total protein and low protein-globulin ratio characterize heart disorders with hepatic injury. When compensation occurs the serum protein is often increased independently of whether special measures are taken to increase the serum protein. Simultaneously with the process of compensation a transitory increase in sedimentation reaction often appears; the cause is unknown. Although the effect of the protein balance on special protein administration in uncompensated cases cannot always be registered by the serum protein value, it seems to be advantageous. The protein administered, however, should as far as possible be free from sodium ions.

Progrès Médical, Paris

76:273-304 (June 10) 1948

*Research on Pathologic Physiology of Amputation Stumps. Study on Spatial Modifications of Fantom Limbs. A. Jung.—p. 275.
Amenorrhea and Ascensus Uteri. H. Vignes.—p. 281.

Spatial Modifications of Fantom Limbs.—Jung studied 50 amputees, 27 of whom had a precise notion of the length of their fantom limbs. On the average, the length of the fantom limb is as much more considerable as the level of the amputation is nearer to the root of the limb. The fantom becomes shorter as a rule when a weight is attached to the arm or to the forearm bent at a right angle. The fanfom becomes shorter or longer when the weight has been attached to the extensor side. At rest the fantom may have the tendency to adopt the length of the prosthesis. At work or if weight has been attached, the fantom becomes shorter. Procaine hydrochloride infiltration of the skin or of the muscles of the stump shortens the fantom. Infiltration of the stellate ganglion on the side of the amputation lengthens the fantom, while infiltration of the stellate ganglion on the opposite side shortens the fantom. In persons with amputations on both sides, infiltration of the stellate ganglion lengthens the fantom of the same side and shortens that of the opposite side. It is suggested that the infiltration of the stellate ganglion produces vasodilation in the extremity of the same side and vasoconstriction of the centers of the opposite extremity because of the crossing of the cerebrospinal fasciculi. The peripheral vasodilation therefore seems to have an opposite effect to that of the cerebral centers. Infiltration of the stellate ganglion in persons whose upper extremity has been amputated may be followed by a sensation of relaxation which has a calming effect on the patient. In persons with amputation on one side this improvement is obtained independently of the side of the infiltration of the stellate ganglion, while the effect is bilateral in patients with amputations on both sides. The sensation of peripheral heat occurs only on the same side as that of the infiltration of the stellate ganglion. In some instances the "lengthening" of the fantom obtained by the infiltration of the stellate ganglion may give the patient the impression of working with his fantom hand. The application of weight to the lower extremities shortened the fantom limb in some instances and lengthened it in others. The infiltration of the skin, as a rule, shortened the fantom. The infiltration of the stellate ganglion of the opposite side shortened the fantom limb. Lumbar infiltration on the side of the amputation and infiltration of the stellate ganglion of the opposite side improved considerably the walking of some of the amputees with artificial limbs and gave them the impression of walking with their own feet.

Revista Clinica de São Paulo

23:1-26 (Jan.-Feb.) 1948

*Laurence-Moon-Bardet-Biedl Syndrome: Case. A. Bruna de Einis and D. Pupo Nogueria.—p. 1.

Laurence-Moon-Bardet-Biedl Syndrome.—The authors report a typical case of Laurence-Biedl syndrome in a girl 17 years old. Consanguinity of the parents and ancestors and heredity were ruled out. Administration of thyroid in daily doses of 0.1 mg. for ten consecutive days followed by ten days without therapy for several months normalized the metabolism but had no influence on the syndrome. Roentgen examination of the head showed a normal sella turcica of increased size. Administration of thyroid for some time resulted in an abundant elimination of gonadotropin in the urine. These facts show that the syndrome is not of hypophysial origin. The authors believe that the syndrome and the congenital malformations associated with it are due to defects of the germ plasm.

Strasbourg Médical

108:127-132 (April 25) 1948

*Effect of Infiltration of Pneumogastric Nerves on Pains from Gastroduodenal Ulcers. J. Warter, A. Fitzenkam, A. Lévy and J. Rouillard. —p. 127.
Tomographic Study of Aorta: Its Importance for Differential Diagnosis of Aortic Dilatation from Mediastinal Neoplasm. R. Even and J. Lecoeur.—p. 128.
Tomographic Exploration of Area of Hilus in Adults. R. Jeanneret. —p. 130.

Injection of Pneumogastric Nerves for Gastroduodenal Ulcer Pain.—Warter and his co-workers treated 18 patients with pain from gastroduodenal ulceration by injecting 10 cc. of a 1 per cent procaine hydrochloride solution at the level of the vascular-nervous bundle of the neck and of the sixth cervical vertebra within the sternocleidomastoid muscle. One hundred and eighteen infiltrations were made. In the majority of the patients infiltration on the left side was sufficient to control the pain. Bilateral infiltration was required only in the most refractory cases. Relief of pain was definite in all patients. In 9 it was immediate and in 4 it occurred within several minutes. In 3 patients there was only little improvement. The infiltration was ineffective in 1 case of a gastric ulcer of the posterior wall, and one single injection, made at the left side, was ineffective in 1 patient with duodenal ulcer. In patients who were benefited by the treatment the relief from pain lasted for six to eight hours. Ten of the patients had a definite simultaneous sensation of heat at the level of the epigastrium. In 2 patients, the abdominal reflexes were diminished before the infiltration, but were restored to normal immediately after the infiltration. Paralysis of the larynx did not occur in any case, but nearly all patients presented mild tachycardia. The main effect of the infiltrations is on the sensory fibers of the pneumogastric nerves.

Book Notices

The Acute Bacterial Diseases: Their Diagnosis and Treatment. By Harry F. Dowling, M.D., F.A.C.P., Clinical Professor of Medicine, George Washington University, Washington, D. C. With the collaboration of Lewis K. Sweet, M D., Chief Medical Officer in Pediatrics and Infectious Diseases, Gallinger Municipal Hospital, Washington, D. C., and Harold L. Hirsh, M D., Assistant Professor of Medicine, Georgetown University, Washington, D. C. Cloth. Price, $6.50. Pp. 465, with 55 illustrations. W. B. Saunders Co., 218 W. Washington Sq., Philadelphia 5, 1948.

This monograph emphasizes the diagnosis and treatment of bacterial infections and the necessity of making a diagnosis on an etiologic basis. An attempt has been made to present the latest specific antibacterial agents used in the treatment of various infections. But, as with other similar projects, by the time publication takes place, rapid advances in therapy have occurred, so that statements applicable six months or a year before are already outdated.

Part I is concerned with the general phases in the diagnosis and treatment of infectious disease. The value of the illustration on "the administration of specific antiserum" on page 33 is diminished because of the fine print. This also applies to the illustrations on pages 63, 85 and 97. The principles of sulfonamide therapy are reviewed. Sulfonamide compounds are given as the drugs of first choice for plague, but recent developments show that streptomycin occupies first place. A survey of therapy with penicillin and streptomycin is then presented. Key references to pertinent literature are cited throughout. Part II considers the diseases caused by cocci. The discussion of pneumococcic infections reflects Dr. Dowling's considerable knowledge of the subject. The reviewer does not agree with his dose schedule of penicillin for pneumococcic pneumonia as given on page 117. He would prefer to use crystalline penicillin in an aqueous solution in doses of 50,000 to 100,000 units every eight hours rather than 15,000 units every three hours, and he does not employ oil and wax preparations of penicillin for an infection as recommended by Dr. Dowling throughout the monograph. Under streptococcic diseases, many will disagree with the recommendation that active immunization against scarlet fever is limited to children. Many do not believe that children should be immunized. The recommendation that subacute bacterial endocarditis should be treated with 300,000 units of penicillin during each twenty-four hour period by continuous intravenous or intramuscular infusion is at variance with practice in most clinics. An unnecessary amount of space has been devoted to gonococcic infections. Part III is a consideration of diseases caused by bacilli and includes a survey of typhoid, Salmonella infections, Shigella infections, brucellosis and acute tuberculosis. The chapter on pertussis by Dr. Sweet is particularly informative. Other bacillary diseases discussed include Hemophilus influenzae infection and tularemia. Part IV presents bacterial diseases caused primarily by exotoxins. This includes an excellent section on diphtheria.

This monograph is recommended to practitioners and students. With the exceptions noted, the illustrations, some in color, are appropriate and clearcut. An outstanding feature is the references to the medical literature appended to each chapter. The volume has a good index. It probably is impossible for any author of a monograph to keep abreast of the rapid advances in antibacterial therapy. However, no serious mistakes will be made if the recommendations in this book are followed.

The Healthy Hunzas. By J. I. Rodale. Cloth. Price, $2.75. Pp. 263, with illustrations. Rodale Press, Emmaus, Pennsylvania, 1948.

Popular interest in food-health relationships as influenced by the soil in which the food was grown began in this country in 1921, when the great English physician Sir Robert McCarrison delivered the Sixth Mellon Lecture at the University of Pittsburgh, on "Faulty Food in Relation to Gastrointestinal Disorders." The salient points of this lecture centered around McCarrison's observation on the marvelous health and robustness of the Hunzas, who dwell in a valley on the northwestern border of India, where Afghanistan, China and Russia converge. These observations were given wider circulation on the part played by the quality of the soil in food-health relationships by Sir Albert Howard, an orthodox agricultural scientist who became convinced from his work in India that chemical fertilizers in the main only "blew up" the plant at the expense of its health and of its nutritive values; that what we have been getting since the introduction of chemical fertilizers around 1860 has been volume and not value, and that the only kind of fertilization that was safe and health-producing was the composts.

The author, who is also the author of "Pay Dirt" and editor of the magazine *Organic Gardening*, has collected material in shape of numerous books and articles dealing with Northwest India. In addition, he has exchanged many letters with the present ruler, the Mir of Hunza, who is well informed about what is said of his people in the outside world.

This book, however, was written to interest the public in a theory of agriculture as it relates to the health of plants and animals who live on them. As such it is one of a dozen which have appeared in the last fifteen years designed to convert the reader to "organics." This and many of the others have been dressed up with the trappings of a cult according to ancient formula so well known to the medical historian: "One cause, one remedy, one master, one set of facts set forth in the gospel." This book, then, becomes a commentary on the "gospel."

Stripped of its mysticism, there is much that is of vital importance in this book to the health of our people. As the population of the world increases 20,000,000 souls each year and more, and the land becomes increasingly depleted, the problem facing the world is not so much how to cure disease, or even to prevent it, as it is to keep the people in robust health. Read with a judicial eye and with a mind trained to detect fallacies of cultism, this entertaining book can supply physicians with many important facts and suggestions.

Diagnostiske og terapeutiske problemer ved ferris undulans. Af Poul Mogens Jersild. [Diagnostic and Therapeutic Problems in Undulant Fever.] Denne afhandling er af det lægevidenskabelige fakultet antaget til offentligt at forsvares for den medicinske doktorgrad. With an English Summary. Paper. Pp. 156, with 3 illustrations. Ejnar Munksgaard, Nørregade 6, København, K, 1942.

This volume is an excellent summary of the problem of the diagnosis of human brucellosis by an authority in Denmark. Jersild considers first diagnostic tests for brucellosis. He points out that complement-fixing antibodies in the serum may make a delayed appearance, compared with agglutinins for Brucella, and they may persist longer in the blood than agglutinins. He concludes that the agglutination test is a highly reliable diagnostic test for active disease. The complement fixation reaction is more likely to be positive in patients that have had the disease in the past. In discussing the cutaneous test, he believes that the reaction is specific, and expresses either an active or past infection. Ten per cent of the adult population in a medical ward in Copenhagen had positive reactions, whereas less than 1 per cent of children gave positive reactions. According to Jersild the cutaneous test is not a reliable means for diagnosing active brucellosis. Brucella abortus is the only species of Brucella which has been isolated from patients in Denmark. He has never encountered a positive blood culture in a patient with negative seroreactions, which is at variance with the experience of some persons in this country. The author has been interested in the opsonins for Brucella found in normal persons and those with proved brucellosis. He believes that normal opsonins can be distinguished from immune opsonins by the use of anticomplementary serum obtained from patients with hyperglobulinemia; i. e., multiple myeloma. In discussing chronic brucellosis, he states that he has not been able to correlate brucellosis with Hodgkin's disease. In summary, the diagnosis of acute or chronic brucellosis is unequivocally established by isolation of Brucella from the patient. The next most reliable procedure is the agglutination reaction. The opsonocytophagic test and the cutaneous test are most reliable for epidemiologic studies, and of little aid in the diagnosis of the sporadic case. The reviewer is in agreement with his interpretation of procedures used in the diagnosis of human brucellosis. Unfortunately, too often the diagnosis is based on a vague set of symptoms and a positive reaction to an intradermal test. If blood cultures remain sterile and repeated agglutination tests are negative, one must seriously doubt the presence of active disease.

Jersild concludes his monograph with a discussion of the use of sulfanilamide in the treatment of undulant fever. The drug appears to shorten the duration of the illness, but one cannot be too enthusiastic about the results.

He has appended a partial survey of the literature, especially references to publications which have appeared in the foreign literature. The brief monograph represents a sound discussion of the diagnosis of brucellosis.

Contribuição ao estudo da alergia infratuberculinica na infância. Por Homero Braga. Tese apresentada para o concurso de professor catedrático de clinica pediátrica médica e higiene infantil, da Faculdade de medicina do Paraná. Paper. Pp. 140, with 6 illustrations. Empreza gráfica Paranaense Ltda., Curitiba, Brazil, 1941

This is a report of a study among contact children in Brazil concerning the tuberculin reaction. The study is based on the findings of Willis and Saenz, who concluded that in the guinea pig the tuberculin reaction based on the persistence of the allergic state could be remobilized by the inoculation of tubercle bacilli—a condition termed by Willis as "latent" allergy. Saye and Assis verified this with BCG following primary vaccination in children and the anallergic state reactivated by revaccination. Assis in children and Rosenberg in adults noted the effect of tuberculin injections in reactivation. This was called "alergia infra-tuberculinica" by Assis (infratuberculin allergy). Braga studied 134 children and found that 107 (79.85 per cent) had positive reaction to tuberculin, while 27 (20.14 per cent) had negative. The 27 with negative reaction were studied as having infratuberculin allergy by administration of 0.1 mg. dead BCG intradermally; and, of these, 22 proved to possess infratuberculin allergy, while in 5 the allergy could not be verified. The author classified these 5 as 3 doubtful and 2 negative, however. The author suggests that a state of residual allergy (or anallergy) can be activated or reinforced by inoculation with a complete antigen. He stresses the quantitative values or grades of the state of allergy, which he suggests as weak, medium or marked as determined by the features of the reaction. The constitutional state of the children appeared to influence the intensity of nonspecific reactions. There was no absolute correlation between the intensity of the allergy and the roentgenologic picture. In some of the children with infratuberculin allergy correlation could be made with the increased resistance to the infection and its evolution.

Psychiatry in a Troubled World: Yesterday's War and Today's Challenge. By William C. Menninger, M.D., General Secretary, The Menninger Foundation, Topeka, Kansas. Cloth. Price, $6. Pp. 636. The Macmillan Company, 60 Fifth Ave., New York 11, 1948.

The author of this book is the president of the American Psychiatric Association, the American Psychoanalytic Association and the Central Neuropsychiatric Association, in addition to his duties as chairman of the Group for the Advancement of Psychiatry and general secretary of the Menninger Foundation. He has accepted these honors modestly but not lightly. He is conscientious and fearless in his administrative duties as well as in his attitudes and beliefs.

The author's background of training and experience, particularly as Chief Consultant in Neuropsychiatry to the Surgeon General of the U. S. Army, has fitted him for the presentation of this comprehensive book. The reader is given a first hand picture of the actual situation and condition of psychiatry in this country at the beginning of World War II, and the obstacles that were necessary to overcome to reach a maximum of efficiency with inadequate personnel and inadequate organization. The author has outlined many of the lessons which psychiatry learned the hard way during the war and how to apply that learning to the postwar world.

Dr. Menninger points out that the war emphasized that psychiatry, to reach its full usefulness, must take three important forward steps: Research activities must be increased; the great need for more and better trained psychiatrists must be filled, and psychiatry must be presented to the public in such a way that there will be genuine, intelligent understanding.

This book is thorough, well written and easily understandable. Whether you are a psychiatrist, physician, psychologist or layman, you can profit by reading this book, as well as some of the excellent reference material.

An Evaluation of Non-Directive Psychotherapy by Means of the Rorschach and Other Indices. By George A. Muench, Assistant Professor of Psychology, University of Louisville, Louisville, Kentucky. With a foreword by Carl R. Rogers, Professor of Psychology, University of Chicago, Chicago. Applied Psychology Monographs of the American Psychological Association No. 13. Paper. Price, $2. Pp. 163. Published for the American Psychological Association by Stanford University Press, Stanford University, California; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, 1947.

This monograph presents another attempt at shortening psychotherapy by the method called nondirective psychotherapy. Although the author warns against evaluation of the results in any form of psychotherapy, he goes ahead to evaluate his process even without allowing a lapse of time after the termination of the therapy. It is well known that most of the psychoneuroses show some improvement after a certain length of ventilation (confession) with a nonjudgmental therapist. This is usually referred to as abreaction. It has also been established that some patients improve temporarily as a way of exhibiting gratitude to their therapist. In reading the case histories in the monograph one reads almost nothing about what has been said by the therapist, and the impression is left that the process consists almost entirely of self analysis in the presence of an objective listener. This monograph may prove interesting to any one desiring to examine all the different approaches to brief psychotherapy, but it is of doubtful value to the student or the well informed psychotherapist.

Klinisch-praktische Bewertung des Elektrokardiogrammbefundes. Von Privatdozent Dr. Oskar v. Zimmermann-Meinzingen, Vorstand der I. Medizinischen Abteilung der Krankenanstalt Rudolfstiftung, Wien III. Band I, Wiener Beiträge zur inneren Medizin, herausgegeben von Hanns Fleischhacker. Boards. Pp. 227, with 136 illustrations. Wilhelm Maudrich,, Spitalgasse 1B, Vienna IX/2; Grune & Stratton, Inc., 381 4th Ave., New York 16, 1948.

In publishing this monograph the author had as his purpose the brief presentation of the meaning of the electrocardiogram in clinical practice in simple language suitable for the medical student and the general practitioner. In the opinion of the reviewer, the author fails in these purposes because the presentation is not simple, and he assumes that the reader for whom it is intended has a greater knowledge of electrocardiography than he presumably has.

The first section, which deals with the role of the electrocardiogram in diagnosis, the clinical circumstances indicating the need of recording the electrocardiogram, what is to be expected clinically from the electrocardiogram and the circumstances in which the electrocardiogram alone is diagnostic, falls short of the mark.

The second section deals with particular arrhythmias and electrocardiographic contours. The part on arrhythmias is fairly adequate, but the part dealing with the contour of the electrocardiogram is not acceptable by modern standards.

The illustrations in the book are poor and the author is apparently poorly informed of recent developments outside of his provincial limits. For example, on page 12 he has the impression that the Mayo Clinic is in Boston!

So many books have appeared recently on electrocardiography that the time has come when no others should be published unless they serve to fill a gap. This monograph fails to do so.

An Introduction to Physical Methods of Treatment in Psychiatry. By William Sargant, M.A., M.B., M.R.C.P., Physician, Maudsley Hospital, London, and Eliot Slater, M.A., M.D., F.R.C.P., Physician in Psychological Medicine, National Hospital, London. With a chapter on Treatment of the Epilepsies by Denis Hill, M.B., M.R.C.P., D.P.M., Physician in Psychological Medicine, King's College Hospital, London. Second edition. Cloth. Price, $3.50. Pp. 215. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

This is a welcome second edition. The book contains an addition in that it has a chapter on the treatment of epilepsy. There are eleven chapters consisting of two chapters on treatment with insulin in schizophrenia and modified insulin therapy in various syndromes. There is a chapter on convulsive therapy. These three chapters are detailed adequately with all indications and contraindications. Through all this, one notices a welcome conservative attitude. The chapter on epilepsy is fairly well detailed. Other chapters consist of chemical sedation and stimulation; the technic of continued sleep treatment; use of drugs in psychotherapy; diet; vitamins and endocrines. The chapter on prefrontal leukotomy is in adequate detail, and again there is the welcome conservative attitude which is lacking in many publications.

The treatment of general paralysis includes malaria and penicillin therapy. However, nothing is said of the use of typhoid vaccine and other physical agents. The last chapter is one on the relationship of psychology to somatic treatment. There is a short bibliography at the end of the book which is adequate to orient a person if he wishes to do more intensive study. Although this book contains only 200 pages, it is a valuable addition and can be recommended to psychiatrists and all those students interested in the physical aspects of psychiatric therapy.

Vitamin and Mineral Content of Certain Foods as Affected by Home Preparation. By Elizabeth M. Hewston, Elsie H. Dawson, Lucy M. Alexander, and Elsa Orent-Keiles. Bureau of Human Nutrition and Home Economics, Agricultural Research Administration. United States Department of Agriculture, Miscellaneous Publication No. 628. Paper. Price, 30 cents. Pp. 76. Supt. of Doc., Government Printing Office, Washington 25, D. C., 1948.

Little accurate information is available about the retention of vitamins and minerals in the home preparation of foods. Food composition tables usually give figures for fresh, raw food and do not take into account the losses occurring during transportation, storage and household preparation. All persons interested in nutrition should welcome this informative publication which gives the results of a comprehensive investigation based on common methods in the home preparation of foods.

Twenty common foods were purchased on the open market. These were prepared in several different ways and the vitamin and mineral contents were determined. This bulletin gives the technics employed and the results of the various cooking methods. There is a comprehensive bibliography. It should merit the attention of all students of food and nutrition.

Osteophthisis Pelvis et Femorum: Zugleich ein Beitrag Zur Frage der spontanen Rückbildung maligner Tumoren. Von Dr. Gottfried Hartmann, Assistent des pathol. Anat. Institutes der Universität Wien, Wien. Wiener Beiträge zur Pathologie und pathologischen Anatomie, Band I. Boards. Price, $5. Pp. 183, with 19 illustrations. Wilhelm Maudrich, Spitalgasse 1B, Wien IX/2; Distributors in U. S. A.: Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1947.

The author presents a case of extraordinarily extensive absorption of the skeleton involving complete disappearance of the pelvis, upper two thirds of the left femur and the head and neck of the right femur. The process began in the region of the left hip in a normal 16 year old girl, progressed rapidly for three years, and then gradually slowed down until it ceased about ten or twelve years after the onset. The patient had little pain or local symptoms, remained in relatively good health, getting about on crutches and even giving birth to 2 normal babies by cesarean section. She died at the age of 49 of a carcinoma of the stomach which had given local symptoms for only about four months.

At autopsy, a scirrhous carcinoma of the stomach was found with local peritoneal and retroperitoneal spread. Metastases were found in the resorbed areas of the pelvis and left femur and in the fourth and fifth lumbar vertebrae.

Among the possible causes for the local bone resorption, the author considers: (1) congenital malformation, (2) bone atrophy, (3) aseptic necrosis, (4) a new type of process, (5) parasites, (6) Hand-Schüller-Christian disease, (7) primary bone tumor (including cavernous hemangioma) and (8) metastatic bone tumor. He concludes that the latter best fits his case; namely, that a carcinoma of the stomach with osteolytic metastases occurred during adolescence of the patient with no local symptoms, that the osteolytic process finally ceased and the carcinoma lay "dormant" for over twenty years, becoming active just before the death of the patient with local symptoms from the primary tumor.

This is an interesting case, and it is regrettable that the author's conclusions must rest on speculation rather than sound evidence. If biopsy had been performed at the time the osteolytic process was active, the interpretation would be much more convincing. It is much more probable that the primary cause was not carcinoma and that metastases, if present, were late secondary complications.

A Rorschach Study on the Psychological Characteristics of Alcoholics. By Charlotte Buhler, Ph.D., Consulting Psychologist, Los Angeles County General Hospital, Los Angeles, and D. Welty Lefever, Ph.D., Professor of Education, University of Southern California, Los Angeles. Memoirs of the Section of Studies on Alcohol, Laboratory of Applied Physiology, Yale University, No. 6. Paper. Price, 75 cents. Pp. 64, with 14 illustrations. Distributed by Quarterly Journal of Studies on Alcohol, Box 2162 Yale Station, New Haven, Conn. Published for the Section of Studies *on Alcohol by Hillhouse Press, 432 Temple St.*, New Haven, Conn., 1948.

This monograph of 64 pages reports investigations by means of the Rorschach test in 100 alcoholic patients, 77 men and 23 women. The report limits itself to a description of a Rorschach sign list, which is published in full; to the application of this list in alcoholism; and to a description of a method of statistical analysis developed by the authors for studying the Rorschach test signs. The authors report findings in alcoholic addicts as compared with other clinical groups, and their conclusion as to the alcoholic addict's personality.

The monograph does not include a sample of the original Rorschach test records. A report on a Rorschach test investigation, without a sample of original test records, amounts to asking a reviewer to accept interpretations on faith, without the raw material that was interpreted. The authors do promise (page 13) that "detailed reports will be made elsewhere," since the present study is part of a larger one. Perhaps when these other reports are published, some Rorschach test records will be included. Until then the report is incomplete.

Atlas of Dental and Oral Pathology. Prepared at the Army Institute of Pathology from Material in The Registry of Dental and Oral Pathology of The American Dental Association. By Joseph L. Bernier, D.D.S., M.S., Lt. Col. Dental Corps U. S. Army, Chief of the Dental and Oral Pathology Section, Army Institute of Pathology, and J. E. Ash, M.D., Scientific Director of the American Registry of Pathology. Fourth edition of previous editions of James B. Mann, D.D.S., M.D., and Henry M. Goldman, D.D.S. Fabrikoid. Price, $7. Pp. 236, with 484 illustrations. American *Registry of Pathology*, National Research Council, *Army Institute of* Pathology, Washington 25, D. C., 1948.

Every member of the profession interested in this special field of pathology should own this atlas and refer to it frequently. The excellent physical format of writing and simplicity in style indicate that the authors are very familiar with their subject. They describe their subject in simple language. The description of the embryology and histology of the hard structures is by anatomic layers as the tooth is seen. The numerous photomicrographs are exceptionally clear.

The classification of odontogenic tumors is on an embryologic basis, whereas odontogenic cysts are discussed on a clinical basis. Soft tissue cysts are inaccurately included in this latter group. For the student, it might be well to classify these tumors uniformly.

The clinical descriptions of diseases involving the soft tissues of the mouth are not as accurate or as complete as the descriptions of the pathology of dental structure per se. Some of the clinical photographs would have greater teaching value if they were in colors.

This is probably the first book of this type to include a description of the effects of an atom bomb explosion on the oral tissues. This atlas is highly recommended.

Dr. Kirkbride and His Mental Hospital. By Earl D. Bond, M.D. Cloth. Price, $3.50. Pp. 163, with 7 illustrations. J. B. Lippincott Co., 227-231 S. Sixth St., Philadelphia 5, 1947.

Dr. Bond's book is not only an interesting, living profile of Dr. Thomas S. Kirkbride, the outstanding psychiatrist of his time, but is a notable addition to a rarely cultivated field, the history of psychiatry. Too often in this age we are so much intrigued with the important additions to a scientific discipline that we forget the labors and spirit of those pioneers who from few materials and with crude tools laid solid foundations without which the scientific superstructure could never have been erected. Such a pioneer and builder was Dr. Kirkbride. He not only realized that mental patients were human beings, people rather than psychoses, but constantly in his relation with patients he translated his beliefs and feelings into professional and personal behavior. Not routinely, but particularly and thoughtfully the medical, occupational and diversional needs of the patients under his care were served. In a sense he was the prophet of psychosomatics, for he understood so well that the so-called insane were unified and total in their functioning. Under Dr. Kirkbride, psychiatry achieved a high summit of humanitarianism. He bequeathed this rich legacy of care, understanding and treatment to the Pennsylvania Hospital, where it has been served conscientiously and faithfully by his successors, including Dr. Bond. Dr. Bond has brought to the writing of this book not only the accurate accumulation of valuable historical data, but the artistry of interesting and sympathetic description.

Handbook of Applied Pharmacology. Edited by Frederick Schroeder, M.D., F.A.C.P., and Arthur W. Grace, M.D., F.A.C.P., Formulary Committee of the Medical Board of The Long Island College Hospital, Brooklyn, N. Y. Fabrikoid. Price, $2. Pp. 133. The Long Island College Hospital, 340 Henry St., Brooklyn, N. Y., 1948.

This book represents essentially a compilation of the various therapeutic agents obtainable in the Long Island College Hospital. It has been prepared with the following objectives in view: "1. To acquaint the members of the Hospital Staff with the preparations carried in the Hospital Pharmacy for use in the In-and Out-Patient Departments; 2. To outline the dose, route of administration, size and nature of package of each material presented; 3. To indicate those conditions for which the preparations are employed." This purpose the authors have admirably fulfilled. This handbook should be of use to the house staff of the Long Island College Hospital as well as to the staffs of similar institutions, although in other institutions some of the therapeutic agents mentioned may not be obtainable.

Kinesiology Handbook: A Study Guide and Laboratory Manual. By M. Gladys Scott. Loose-Leaf. Paper. Price, $2. Pp. 148, with 25 illustrations. F. S. Crofts & Co., 101 Fifth Ave., New York 3, 1947.

As pointed out by Dr. C. H. McCloy in the introduction to this handbook, "the concepts of mechanics have usually been taught with no relationship to the movement of man." The author has overcome this difficulty by assembling special experiments and problems which do apply to man. This text is "designed as a workbook and study aid for students of kinesiology." It includes twenty-one lessons on various phases of kinesiology, and in each lesson there is an introduction, a list of references, a list of equipment required for the lesson, a description of the project and, finally, a list of questions elucidating the facts learned from the lesson.

Such subjects as motion in relation to structure of joints, action of the muscles of the various parts of the body, muscular tonus, muscular fatigue, leverage, inertia, relaxation, locomotor skills, development of muscular strength and of muscular tonus and measurement of strength of groups of muscles are discussed. Professors of anatomy in our medical schools might well advocate greater consideration of this subject in teaching of medical students, because modern physicians should be well grounded in kinesiology and functional anatomy.

This handbook is well organized and well planned and should prove a useful teaching aid, not only for students of physical education, physical therapy and occupational therapy but also for medical students.

Essentials of Fevers. By Gerald E. Breen, M.D., B.Ch., D.P.H., Tempy. Divisional Medical Officer, Hospitals Division, the London County Council, London. Second edition. Cloth. Price, $4.50. Pp. 351, with 40 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

Perhaps the chief criticism pertaining to this book is its title. If the term "contagious diseases" or "acute infectious diseases" had been used, it would undoubtedly have been considered in this country much more descriptive of the volume's contents. Beginning with "General Features of Infection" there are thirteen chapters, the final one relating to miscellaneous matters which include "Infectious Diseases and the Law." Most of the intervening titles represent primarily the various common contagious diseases, and a great deal of sound advice is presented in respect to diagnosis, treatment and related facts. It is apparent that the one who has written this book is not merely thoroughly familiar with his subject but that his observations are based on a broad personal experience. The plates in color are the accomplishments of the author as an artist. This is a practical book, concisely written, and printed with clear type on good paper. It should be of exceptional value to the medical student and appreciated in particular by the pediatrician.

Introduction to Human Physiology. By William D. Zoethout, Ph.D. Cloth. Price, $4. Pp. 421, with 142 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

This author has, in most respects, merely expanded the material presented in the accompanying laboratory guide, which is the outgrowth of many years of experience in teaching physiology to dental students. In that respect, it is on a soundly conservative basis. No one can take issue with the factual material presented. The textual material, however, is presented in a too elementary manner. Illustrations are good, many obviously prepared from original material. After each chapter there is a list of questions bearing on the chapter contents. The book should be excellent for high school students or college freshmen. Dental students should be able to digest a more adult diet.

The laboratory guide, in contrast, could be used even for medical students. Directions and illustrations are apt, concise and well composed and the material well selected, except, perhaps, some of the experiments on chemical reactions, which are rather elementary. Also experiments on human subjects are not numerous. This is always a serious defect in a physiologic laboratory.

Las arritmias en clínica (diagnóstico, pronóstico y tratamiento). Por el Doctor Antonio Battro, profesor adjunto de clínica médica de la Facultad de ciencias médicas de Buenos Aires. Paper. Pp. 511, with 200 illustrations. El Ateneo, Florida 340, Buenos Aires, 1948.

This work by the late Dr. Battro is an elaborately illustrated monograph concerning cardiac arrhythmias. It brings the subject up to date and includes work which the author and his collaborators have recently carried out, including observation on intracavity electrocardiography in man. It is divided into two parts. The first deals with the background material pertaining to arrhythmias, including the anatomy and physiology of the heart, the methods for graphic registration of the cardiac rhythm, as well as a more extensive section on the theory of the electrocardiogram and the characteristics of the normal electrocardiogram in the limb and chest leads. This latter section also discusses the so-called unipolar leads and the esophageal electrocardiogram. The second section considers the clinical aspects of the various arrhythmias. There is an extensive bibliography covering the important references in various languages dealing with this subject. The format is clear and the illustrations are beautifully reproduced and help to document the manuscript. This volume should be of interest to the cardiologist.

Diseases of the Heart and Circulation. By Albert A. Fitzgerald Peel, M.A., D.M., F.R.F.P.S., Professor of Medicine, Anderson College of Medicine, Glasgow. Oxford Medical Publications. Cloth. Price, $9.75. Pp. 398, with 61 illustrations. Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Square, London, E. C. 4, 1947.

The author presents the conventional, modern concepts of heart and vascular disease. To accomplish this objective in 400 pages, he has had to limit many subjects to brief paragraphs, but there are few omissions. The roentgen illustrations are excellent and the electrocardiographic reproductions are fair to good. The bibliography is limited. The American Heart Association Classification of Heart Disease has been adopted by the author. In his discussion of the treatment of subacute bacterial endocarditis, it becomes clear that the use of penicillin in the British Isles is more limited than in the United States, possibly due to limited supplies.

Recent Advances in Endocrinology. By A. T. Cameron, C.M.G., M.A., D.Sc., Professor of Biochemistry, Faculty of Medicine, University of Manitoba, Winnipeg, Canada. Sixth edition. Fabrikoid. Price, $6. Pp. 443, with 74 illustrations. The Blakiston Co., 1012 Walnut St., Philadelphia 5, 1947.

Considering its concentrated form, this book gives an excellent presentation of the essentials of endocrinology for the reader who does not want a mass of detail and yet wishes competent scientific treatment of the subject. Recent advances in our knowledge are stressed. The book brings up to date the experimental work pertaining to function of the endocrine glands and also deals with the latest discoveries and methods of treatment of their diseases.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

THEOBROMINE IN ANGINA

To the Editor:—Please discuss the present use of theobromine preparations, especially of "theocalcin," in cardiac therapy. What is the physiologic action with reference to the arterial system in general and the coronary arteries in particular? What other drugs are of use in anginal conditions due to a narrowing of the coronary arteries?

E. W. Hunter, M.D., Greenwood, Miss.

Answer.—In animal experiments, theobromine and theophylline possess a dilator effect on the smooth muscle of the arteries, thus lowering slightly the normal blood pressure. The coronary arteries dilate, and a greater flow through these arteries is obtained in both anesthetized and nonanesthetized dogs (Essex and others: *Amer. Heart J.* **19**:554, 1940). Furthermore, xanthine derivatives increase slightly the contractility of the heart muscle without influencing its rate of contraction. The effect on contraction is more strikingly obtained in the weakened or damaged heart of the dog (Flaum, E., and Rössler, R.: *Klin. Wchnschr.* **12**:1489, 1933). Treatment with aminophylline has been claimed to decrease the size of infarcts following surgical occlusion of a branch of the coronary arteries in dogs (Fowler, W. M.; Hurevitz, H. M., and Smith, F. M.: *Arch. Int. Med.* **56**:1242, 1935). More recently Mokotoff and Katz (*Am. Heart J.* **30**:215, 1945) found that aminophylline (and, to a greater extent, papaverine) significantly reduced the size of experimental infarcts in dogs and also increased the size and number of collateral channels in the infarcted heart. Similar experiments by Gold and others (*Am. Heart J.* **14**:284, 1937) on cats, however, failed to demonstrate any influence of aminophylline on the infarcted area and on the survival time of the animals.

In the management of the patient suffering from the anginal syndrome the use of xanthine derivatives introduced by Askanazy in 1895 has become a matter of controversy, since Evans and Hoyle (*Quart. J. Med.* **2**:311, 1933) found that the treatment with these preparations did not prevent the occurrence of anginal pain to a greater extent than the administration of placebos. The results of their studies based on the statements of the patients were confirmed by some investigators in this country, but contradicted by others who obtained a salutary effect from these drugs as compared to placebos. On the other hand, Brown and Riseman (J. A. M. A. **109**:256, 1937), using an exercise tolerance test as an objective index, reported improvements in the performance of these tests in 80 per cent of their patients under treatment with theobromine with sodium acetate or theophylline with sodium acetate. A 50 per cent or greater improvement accompanied by decrease in number and diminution in severity of the anginal attacks was obtained in about 25 per cent of their patients. The effect of xanthine derivatives in cardiac patients was further studied by Williams and associates (*Am. Heart J.* **22**:252, 1941) by measuring the deviations of the RS-T waves induced by anoxia. They reported a marked diminution of the sum of the RS-T deviations when the patients were maintained on theobromine or theophylline.

Theobromine with sodium acetate, theobromine with calcium salicylate, aminophylline, theophylline with sodium acetate and theobromine with calcium salicylate are reported to be superior to other xanthine derivatives. Tolerance to all preparations is limited by the degree of gastric distress caused by larger doses, and also, more frequently with theophylline, by insomnia. Maximum tolerated doses usually do not exceed 0.5 Gm. of theobromine with sodium acetate four times daily (equivalent to 1.2 Gm. of theobromine per day) or 0.2 Gm. of aminophylline four times daily (equivalent to 0.6 Gm. of theophylline). No evidence is available to show that theobromine with calcium salicylate ("theocalcin" N. N. R.) is more effective than theobromine with sodium acetate. It is somewhat less soluble than the latter and is supposed to cause less gastric distress.

Admittedly, the evidence for the efficacy of xanthine derivatives is still inconclusive. The lack of other, more effective drug therapy seems largely responsible for their continued use in the treatment of the anginal syndrome. According to Elek and Katz (J. A. M. A. **120**:434, 1942) papaverine hydrochloride given orally in doses of 0.1 Gm. four times daily promises to be more effective than aminophylline.

CAVERNOUS SINUS THROMBOSIS

To the Editor:—Discuss the use of heparin and "dicumarol" in treatment of cavernous or sigmoid sinus thrombosis under the following heads: (a) reasons for using these medications; (b) when should one use heparin with or without Pitkin's menstruum? (c) When should one use "dicumarol?" (d) What laboratory tests are necessary for control of each drug? (e) When should one discontinue use of these drugs? (f) What is the mechanism of action of heparin and "dicumarol?"

James R. Bishop, M.D., Salisbury, Md.

Answer.—While the total experience available to date is relatively limited, the use of heparin and "dicumarol" either together or separately in the treatment of cavernous or sigmoid sinus thrombosis seems justified. This is established on the basis of the large experience in this country and in Sweden which has resulted in diminishing both the death and complication rate in patients with thrombophlebitis. Substantiation of the favorable effect on thromboembolic diseases has now been established by the Committee for the Evaluation of Anticoagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction. While a few patients have been so treated, further work needs to be done in the specific field of cavernous sigmoid sinus thrombosis, but the evidence appears strong that favorable results may be expected. If the patient were acutely ill, heparin would be indicated during the first three or four days until the effect of "dicumarol" given on the beginning of the first day would be established.

The use of Pitkin's menstruum with heparin would be an optional alternative to the combined use of heparin and "dicumarol." It should be pointed out, however, that the present preparations are frequently painful and control of the action of heparin is sometimes not well regulated. "Dicumarol" may be utilized in any patient with cavernous or sigmoid sinus thrombosis unless there are contraindications such as hemorrhagic tendencies. For the control of heparin the Lee-White clotting time test is still the most satisfactory, although it is relatively a crude test. The clotting time should be kept on an average of three times the normal clotting time if continuous infusions are used. If the Swedish or intermittent technic is used, the clotting time should return to approximately 10 to 15 minutes at the end of a three and one-half hour interval after an infection of 50 or 75 mg. of heparin. The Quick test or the Link-Shapiro modification should be used for the determination of the prothrombin time for the control of "dicumarol." If desired, the times may be translated in percentage of activity, provided that this is done by the logarithmic curve method which has been described frequently.

In general, it is wise to continue the use of these drugs for twenty-one to twenty-eight days after the last thromboembolic complication. The action of heparin is probably a neutralization of the action of thromboplastin which is an essential factor in the initial phase of the clotting process. The action of "dicumarol" is believed to be based on the prevention of the production of prothrombin by the liver. This information is taken from publications by E. V. Allen and Barker of the Mayo Clinic; E. Jorpes and his co-workers in Sweden; Wright and his co-workers, and K. P. Link and his co-workers.

TRAUMA IN OBSTETRICS

To the Editor:—What role does trauma play in premature separation of the placenta? I have been unable to get any specific, clearcut opinion on this subject from the literature.

M.D., Connecticut.

Answer.—Undoubtedly the role of trauma in the development of premature separation of the placenta has been overemphasized. The older literature particularly stressed that trauma was an important factor in abruptio placentae. Rigby in 1776 considered trauma to be the most important cause of this condition. De Lee and Greenhill (Principles and Practice of Obstetrics, ed. 9, Philadelphia, W. B. Saunders Company, 1947) quote Rigby as saying "separation of the placenta must be owing to some accidental circumstance, to violence done to the uterus by blows or falls, to some peculiar laxity of the uterine vessels from badness of habit, or fever, or to some influence of the passions of the mind suddenly excited, such as fear, anger, etc." The term "accidental hemorrhage" is still used, especially by British authors, to designate the premature separation of the normally implanted placenta. In Holmes's collection of 200 cases of abruptio placentae from the literature (*Am. J. Obst.* **44**:753 [Dec.] 1901) accident was given as the cause in 67 or 33.5 per cent, but in Davis and McGee's series of 164 cases observed at the Chicago Lying-In Hospital, only 3, or 1.8 per cent, were associated with trauma (*Surg., Gynec. & Obst.* **53**:768 [Dec.] 1931).

Whereas external trauma and violence are infrequent causes of premature separation of the placenta, internal trauma is not rarely the cause. During labor several accidents may cause detachment of the placenta, as sudden emptying of a large polyhydramnios, the loosening of the placenta which sometimes follows the delivery of the first twin, manual manipulation during version, use of bags, bougies, gauze and, finally, traction exerted on the placenta by a cord that is actually or relatively too short.

KAHN "VERIFICATION TEST"

To the Editor:—Could you explain the Kahn verification test and offer suggestions for the following patient? A white male farmer 54 years old was seen in September 1946 complaining of severe steady aching pain in both feet only at night. He had been treated for nervous indigestion for years but had not had other serious illnesses. Physical examination did not reveal any abnormality except for pupils that were slightly irregular, were sluggish to light but reacted to accommodation, a systolic aortic murmur, only suggestive Romberg sign and absent patellar reflex. Pain was not felt on either side when the achilles tendons were pinched. The fundi prostate and urine were normal; hemoglobin was 100 per cent; the hematocrit reading 45 per cent. He complained of some difficulty in seeing in the dark which has cleared some on antisyphilitic therapy. The serologic reactions were as follows: Aug. 31, 1946, Kahn positive; September 16, Kahn positive (20 Kahn units, Springfield Laboratory); September 16, Kahn positive (20 Kahn units, Chicago State Laboratory); November 22, positive (4 units); Feb. 6, 1947, positive (10 units); May 31, positive (4 units); August 28, positive (4 units); October 20, positive (2 units); October 21, positive (3 units, Chicago State Laboratory); Jan. 5, 1948, positive (2 units) and May 12, positive (3 units, Chicago State Laboratory); reaction to Kahn verification test, general biologic (false positive). He has had alternating courses of bismuth and dichlorophenarsine hydrochloride until the present. Is further treatment indicated and did the patient have syphilis in the first place? Is a spinal fluid examination necessary for the diagnosis?

Clifford W. Atherton, M.D., Fairview, Ill.

ANSWER.—The question was referred to an eminent syphilologist who says that the Kahn "verification test" is hard to explain since Dr. Kahn changes the rules frequently. As one procedure fails to work, he adopts another. Now he is probably using a combination of four different technics based on a "differential temperature phenomenon," a "triple quantitative technic," a "salt dispersibility technic" and "method B." Since none of these alone or in combination produced the desired result, it is possible that new maneuvers have been added which have not yet been widely published. It is beyond the scope of this reply to explain the reasoning behind the Kahn "verification" test (or tests). The technical details are complicated and an understanding of them is not necessary to interpretation of the test by the average practitioner.

There are three Kahn tests in common use in Kahn's laboratory, and two of these have been widely adopted by other serologic laboratories. These are as follows:

1. The standard Kahn test. This is a flocculation test which differs only in minor technical details from other flocculation tests such as those devised by Mazzini, Hinton, Eagle, and others, and in the hands of a competent technician it gives reliable results, whether on a quantitative or a qualitative basis.

2. The Kahn "presumptive" test. The naming of this test would indicate that its results permitted the physician to "presume" that a patient did or did not have syphilis. This is an erroneous assumption. The "presumptive" test requires the use of a supersensitive antigen, so sensitive that in the hands of the average technician false positive results are secured in a substantial proportion of nonsyphilitic persons.

3. The Kahn "verification" test. The naming of this test would indicate that it verified something; namely, that if a "syphilitic type" reaction is reported, the patient has syphilis; whereas if a "general biologic type of reaction" is reported, the patient does not have syphilis, but does have a biologic false positive serologic reaction. Actually the Kahn "verification" test does not verify anything. It has been shown by investigators other than Kahn that the results of this test, whether "syphilitic type" or "general biologic type," are closely related to the serologic titer of the serum in question. Serums positive in low quantitative titer only, whether from patients with syphilis or from those with nonsyphilitic diseases causing biologic false positive reactions, usually give the "biologic type of reaction" with this Kahn test. Conversely, serums of high quantitative titer, regardless of their source, usually give reactions of the "syphilitic type."

The Kahn "verification" test is one of a number of procedures, the latest of which is the Neurath euglobulin-inhibitor test, designed to differentiate positive serologic reactions due to syphilis from biologic false positive reactions caused by other conditions or occurring in some normal persons. No one of these procedures can be regarded as wholly satisfactory or as furnishing absolute laboratory differentiation of this difficult diagnostic problem.

4. The results of the Kahn "verification test" of the patient described in this inquiry may be totally disregarded. A patient with irregular pupils, reacting sluggishly to light but normally on accommodation, absent patellar reflexes, loss of deep pain sense in the achilles tendons and difficulty in dark adaptation almost certainly has tabes dorsalis, regardless of the outcome of any blood serologic test, whether Kahn standard, presumptive, or "verification," or any other technic. In addition, it is at least suggested that the patient also has cardiovascular syphilis.

The patient in question should at once have a detailed examination of his spinal fluid, including cell count, quantitative protein estimation, quantitatively titered complement fixation (not flocculation) test and colloidal test. In addition, he should certainly have neuropsychiatric and cardiologic or competent syphilologic consultation.

If he has tabes dorsalis with or without cardiovascular syphilis, treatment with bismuth and arsenic compounds should be abandoned in favor of penicillin. It may be desirable to combine penicillin with fever therapy by means of induced tertian malaria. Whether this is the case depends on the patient's general physical condition, his cardiac and neuropsychiatric status and the results of his spinal fluid examination.

5. The spinal fluid examination is necessary for diagnosis in every patient with syphilis, and the physician who attempts to treat syphilis without examination of the spinal fluid is proceeding in the dark.

6. It is suggested also that the inquirer consult modern texts on syphilis and its treatment, such as Stokes, Beerman and Ingraham, "Modern Clinical Syphilology (third edition, Philadelphia, W. B. Saunders Company, 1944), or Moore, J. E., "The Modern Treatment of Syphilis" (second edition, Springfield, Ill., Charles C Thomas, Publisher, 1943) and "Penicillin in Syphilis" (Springfield, Ill., Charles C Thomas, Publisher, 1946).

CHRONIC HEPATITIS

To the Editor:—A young man, age 31, served with UNNRA in Germany. In November 1946 while there he became ill and was given a diagnosis of acute hepatitis. One year later he complained of tiredness, lethargy, white stools, gaseous distention of the bowel and diarrhea. The condition had been present for ten days and was progressive. He stated that he had had several episodes similar to the present attack in the year preceding. An icteric index of his blood was 19.5. I made a diagnosis of chronic hepatitis with acute exacerbation and put him on "meonine" (DL-gamma-methylthiol-alpha-aminobutyric acid) twelve tablets daily, and a high protein diet. He recovered and the icteric index was 7.1 ten days later. His icteric index has run from 7.1 to 11.8 ever since. There have been episodes of white stools and lethargy at intervals of several weeks, in spite of "meonine" therapy, B complex and high protein diet. Please comment on diagnosis, therapy and prognosis.

Albert Irving Clark, M.D., Shreveport, La.

ANSWER.—The diagnosis of chronic hepatitis during an acute exacerbation is probable but hardly proved by the data presented. The commonest symptoms of such a condition are dull aching pain in the right upper quadrant and marked intolerance to fatty foods; the commonest physical sign is hepatomegaly, and the most definite laboratory findings are (1) elevation of the indirect reaction for serum bilirubin, (2) retention of sulfobromophthalein sodium, (3) increased thymol turbidity and (4) increases in the value for serum globulin and in the sedimentation rate of erythrocytes. Since the only laboratory finding mentioned in the case report is an increased icterus index, further studies of hepatic function should be undertaken before the diagnosis is considered as established. Constitutional hepatic dysfunction with hyperbilirubinemia comes to mind as a possible condition to be excluded, not to mention one of the hemolytic varieties of icterus.

Active hepatitis has been demonstrated by needle biopsy of the liver months after an acute infectious hepatitis has subsided; in some cases the only abnormalities noted have been increases in the level of urinary urobilinogen and the urinary content of coproporphyrin. The exact pathologic and physiologic residues of the acute disease are not as yet fully catalogued, and only long observation of those who have had the disease and presumably have recovered and of patients such as the one described here will establish the diagnosis of chronic hepatitis on a secure footing.

The prognosis for chronic hepatitis is uncertain; in some cases the disease seems to progress, and either chronic atrophy of the liver or what has been called "cholangiolitic cirrhosis" develops. Some patients seem to recover, while others have persistent complaints, similar to those of the patient under discussion, for indefinite periods, without ever presenting much in the way of objective evidence of disease.

Treatment of chronic hepatitis is unsatisfactory; restriction of activities, an adequate diet with a high protein content, lipotropic agents such as choline and methionine, liver extract by the intravenous route and high level vitamin therapy have all been recommended, but it is not clear that much improvement has taken place with any or all of these therapeutic agents.

SCLERODERMA

To the Editor:—In a woman patient affected by scleroderma the symptoms were scarcely improved by "etamon" (tetraethyl ammonium chloride) "priscol" (abenzylimidazoline) vitamin D and thyroid. I received news from the United States that the acid-fast sclerobacillus of Wuerthele-Caspe had been discovered and considered as the cause of this sickness. Therefore "promin" (sodium p,-p'-diaminodiphenylsulfone-N,N'-didextrose sulfonate) and streptomycin are indicated. Is there evidence of recovery with these drugs in this disease that has been until now considered a metabolic disease? Does this therapy deserve a trial?

Roberto Pietra, M.D., Torino, Italy.

Answer.—Doubtless reference is made to the following report—Wuerthele-Caspe, V.; Brodkin, E., and Mermod, C.: Etiology of Scleroderma, A Preliminary Clinical Report, *J. M. Soc. New Jersey* **44**:256 (July) 1947. This is a preliminary report on a probable bacterial cause of scleroderma and on its treatment with an antibacterial agent. On the supposition that the organism is a mycobacterium as in leprosy and tuberculosis it was reasoned that the organism should be found in nasal ulcers, subcutaneous tissue.

Six cases of scleroderma were reported. A mycobacterium was recovered from these patients either from nasal ulcers, sputum, subcutaneous tissue or by blood culture. The organism was described as a short, thick, acid-fast rod. Smears were prepared by the Ziehl-Neelsen method. Blood was cultured on Dubo's medium and showed after two weeks' growth a pure culture of short, thick, acid-fast rods.

The ulcerations of the fingers of 1 patient with sclerodactylia were treated with local applications of 5 per cent sodium p,p'-diaminodiphenyl sulfone-N,N'-didextrose sulfonate ("promin") in jelly made of tragacanth. It was reported that the ulcerations healed with considerable improvement in the flexibility of the hands. Other patients were treated with "promin" administered intravenously or orally.

Before judgment can be passed of the bacterial cause of scleroderma and treatment with "promin," further study and confirmation are required.

RETINAL HEMORRHAGE

To the Editor:—Is it advisable to administer rutin prophylactically to prevent recurrence of hemorrhagic retinitis? A patient, now 57, diabetic, had retinitis thirteen years ago, and another attack two years later which was so severe that the ophthalmologist feared that the sight of one eye would be permanently lost. However, he recovered to the extent that he can read newspaper type for a short while until the effort tires him. He has not used insulin for eight years and has a constant blood sugar level of 127 mg. He fears another attack of retinitis.

M.D., New York.

Answer.—From the description of the patient's clinical course, it would seem that the prognosis is none too good inasmuch as there have already been two attacks of retinitis. The vascular state of the retinal vessels is probably none too good and a degenerative retinopathy probably exists as well as some vascular sclerosis. Rutin exerts a beneficial effect in cases of increased capillary fragility. In this case, I know of no definite manner in which you can assure your patient that future attacks can be prevented. On the other hand, no legitimate reason would seem to exist to prevent you from using rutin prophylactically in the hope that it may prevent another attack, or if it does not prevent another attack, it may at least have the effect of diminishing the total effect of an increased capillary fragility.

PES PLANUS

To the Editor:—I have a severe grade of pes planus. For several years I have tried to correct my deformity with exercises, and have worn arch supports at various time without avail. Is manipulation of benefit?

M.D., Georgia.

Answer.—Flatfoot or pes valgoplanus in an adult can be corrected. Only if the foot is fixed or rigid, which means that the position cannot be changed voluntarily, would a manipulation with the patient under anesthesia be required. With a definite muscle spasm and the foot held in the everted position it may require rest with hot packs, or occasionally local or general anesthesia, to get the muscles relaxed. Then the foot can be brought into normal position.

Usually the pes valgoplanus is present with weight bearing and the valgus position of the heel can be corrected and the anterior part of the foot brought back into normal position by conservative means. This is best accomplished by having a pliable shoe with the heel raised on the inner side, and a comma-shaped bar which is higher on the lateral side than on the medial side, attached to the sole of the shoe. Thus the heel is brought into varus and the head of the first metatarsal bone is brought down plantarward. This reestablishes the longitudinal arch as well as the anterior arch. The normal position is retained by the corrective shoe, but this in itself is insufficient. Normal walking must then be practiced in the shoes. This means heel and toe walking. The normal use of the foot in the corrected position will gradually reestablish the strength of the muscles. The symptoms will thus be relieved and the appearance of the foot will improve. It must be emphasized that the use of the corrective shoe should be gradual, starting with five minute periods ten times a day and increasing the walking periods gradually until the shoes can be worn a half day and finally a full day.

HISTAMINE IN MIGRAINE

To the Editor:—I contemplate treating a patient with severe migraine with intravenous administration of histamine. She has not responded to other therapy. What is the efficacy of this method of treatment?

LaMar J. Hankamp, M.D., Delton, Mich.

Answer.—The results of intravenous histamine therapy, as now used for migraine, histaminic cephalgia and Ménière's disease, are in general excellent. In a large series of true migraines, carefully screened to eliminate other sources of headache or pain, authors report almost 80 per cent of either total and permanent relief up to five years, or a degree of improvement in frequency, severity and duration of attacks such that they constitute only a minor annoyance rather than disability. To the present time there is no reliable basis on which to determine whether a particular person will respond satisfactorily to intravenous histamine therapy, or will belong to the approximately 20 per cent in which this treatment fails.

Others report satisfactory results particularly after abandoning the technic of frequent single injections increasing as tolerated, in favor of prolonged exposure (three to ten hours) to intravenously administered histamine at the maximum tolerated rate of injection. Before undertaking the procedure, one should be thoroughly competent to recognize, prevent and treat the numerous and serious reactions which may frequently accompany this procedure, in particular increased gastric acidity with occasional aggravation or reactivation of peptic ulcer—or rarely gastric hemorrhage from unsuspected ulcer—severe typical headache, rapid fall of blood pressure with potential shock, urticaria, asthma or other manifestations of anaphylaxis.

BIURET REACTION

To the Editor:—We have attempted to use the biuret method in the colorimetric determination of total proteins, albumin and globulin with variable results. I would appreciate learning whether there are any other good methods applicable to a spectrophotometer.

M.D., Utah.

Answer.—The two most common methods for the quantitative spectrophotometric determination of total proteins, albumin and globulin are the biuret reaction, which depends on color development with copper sulfate, and the Folin phenol method, which involves the use of a tungstate-molybdate reagent. Robinson and Hogden (*J. Biol. Chem.* **135**:707-731 [1940]) consider the biuret reaction to have certain advantages over the Folin phenol procedure, particularly in that the color intensities developed in the latter method are different for albumin and globulin. An excellent review and bibliography on the biuret method occurs in "Advances in Protein Chemistry," volume III, pages 149 to 150. Greenberg and Mirolubova describe in detail a modified procedure using the Folin phenol reagent in the *Journal of Laboratory and Clinical Medicine* (**21**:431 [1936]). The procedure with pertinent remarks is found in "Outline of the Amino Acids and Proteins," by Sahyun, pages 146 to 149.

TATTOO

To the Editor:—What solutions are used for "tattooing in reverse?"

Arthur J. Ring, M.D., Lynn, Mass.

Answer.—Physicians remove tattoos by tattooing or by plastic surgery. The most widely used method is thoroughly to tattoo 40 per cent tannic acid into the lesion with needles, after which 50 per cent silver nitrate is applied to the area until a hard adherent crust is formed. The area is bandaged and the crust is allowed to come off naturally. It usually takes two treatments, and, as a rule, little scarring results.

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CORRELATION OF GASTROENTEROLOGY AND SURGERY

Chairman's Address

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Boston

Harmony and cooperation are basic cornerstones in all fields of human endeavor the purposes of which are the accomplishment of good. This statement is as significant as it is axiomatic. It needs neither emphasis nor elaboration in the world of today, where its antithesis, the effect of disharmony and lack of cooperation, is so clearly demonstrated and, by contrast, so revealing.

Medicine is *par excellence* a field in which the accomplishment of good is the prime and ultimate purpose. For its attainment, harmonious cooperation is as essential as vocational aptitude and training. The inevitable specialization which has resulted from the broadening and development of medical science during the past few decades has had as a natural consequence the development of an absorbing interest in each specialty, which becomes at times so intensive as to be exclusive and narrowing. Pride in the scope and immediate effect of such intensive effort within a special field may become so great that there is failure to recognize unsuccessful end results or need for ancillary treatment.

The fields of gastroenterology and surgery are striking examples of accomplishment within their own limits, but they also exemplify to a high degree the demanding need for harmonious correlation. The successful diagnosis and treatment of diseases of the digestive tract depend on the knowledge and experience of both gastroenterologist and surgeon. Neither has an inclusive monopoly on this field, and best results are obtained only if both work with tolerance and cooperation. Gastroenterology is, to be sure, concerned chiefly with the diagnosis, medical management and follow-up observations, in both the nonsurgical and surgical groups, but the operative procedures and observations, while, by nature, of strictly surgical interest, concern the gastroenterologist as well. The timing in the use of such operations is of the greatest interest to gastroenterologists. Conversely, surgery, while occupied chiefly with the development of correct and effective therapeutic surgical procedures, is naturally deeply concerned that these procedures be used on the right patient for the right reason and must, therefore, have an intense interest in all that involves gastroenterologic diagnosis and treatment. Both gastroenterology and surgery find their justification in end results and modify their procedures either on the radical or the conservative side, according to the final outcome of their respective treatments.

The ideal relationship of gastroenterologists and surgeons is, therefore, one in which there can be reasoned discussion of procedures, cases and results without the barriers of prejudice, suspicion or patronizing attitude of one for the other. A natural desire to avoid unnecessary operation is as much a part of good surgery as it is of good gastroenterology, whereas the call for aid from surgical intervention must come from the gastroenterologist as soon as he is convinced that it is necessary. The observations in both diagnosis and end results are of equal concern to gastroenterologist and surgeon. Each has an opportunity to give of his experience to the other, and in a harmonious relationship only the greatest good for the patient can result.

The diagnosis and treatment of all digestive diseases concerns both gastroenterologist and surgeon, but the conditions in which cooperative observations and treatment are of highest importance are in the differentiation of structural and functional disease, in the diagnosis of cancer of the digestive tract and in the diagnosis and treatment of peptic ulcer, gallbladder disease and inflammatory and ulcerative diseases of small and large intestines.

Differentiation of structural and functional disease is in all parts of the body not without its pitfalls, but the digestive tract, easily accessible as it is to abuse and irritation, harbors, perhaps to a greater degree than any other part of the body, peculiar perplexities for the diagnostician. In the past, many normal gallbladders and appendixes have been removed and surgeons perhaps temporarily comforted by pathologic reports of chronic cholecystitis and appendicitis, only to have unhappy patients return after a few months with recurrence of the preoperative symptoms. To be sure, careful exploration had shown no evidence of other structural disease, but there had also all too often been no careful preoperative exploration by a gastroenterologist. When the surgeon failed on exploration to find other organic disease and to provide relief by the removal of appendix or gallbladder, patients were classed as psychoneurotic or hypochondriac, whereas if they had been surveyed preoperatively by both gastroenterologist and surgeon, there would have been neither operation nor disappointed patients.

Abdominal symptoms, while at times so distinctive and typical that no survey or period of observation is necessary to make a diagnosis, often require the most scrutinizing survey, not only to determine the chief and underlying cause of symptoms but also to detect other secondary conditions which contribute to the symptomatic picture and which, if undetected,

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From the Department of Gastroenterology, The Lahey Clinic, Boston.

Read before the Section on Gastroenterology and Proctology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

will continue to cause symptoms after the chief cause has been treated. For example, no disease of the digestive tract, whether organic or functional, when associated with gallstones can be satisfactorily treated until the gallbladder has been removed. Conversely, no cholecystectomy will produce entirely satisfactory results if an associated irritable colon and hypermotility of the small intestine is not treated immediately postoperatively. In the interest of time saving and effectiveness of treatment, therefore, a complete survey is indispensable in all patients who have abdominal symptoms. Errors in diagnosis and treatment are too often due to failure to carry out a complete examination previous to treatment.

Functional disorders which are present in conjunction with organic disease and organic disease lurking under cover of obvious functional disorders are too often found in a complete diagnostic survey to allow of exclusively concentrated attention on one typical group of symptoms. In this regard, two points are worthy of special mention. Reference was made previously to the frequent occurrence of irritability of the colon and hypermotility of the small intestine in conjunction with gallstones. A policy proved especially useful is that of classifying patients with gallstones into two groups: first, those who have chronic indigestion, characterized by gas distress and distention, sometimes with nausea and vomiting and with or without typical gallbladder colic, and, second, those who have typical gallbladder colic attacks, but no chronic indigestion between attacks. The first group has inevitably a functional digestive disorder which is not corrected by cholecystectomy alone, but which requires both cholecystectomy and postoperative medical treatment of the digestive disorder. The second group recovers completely from cholecystectomy alone.

A second point of relevant interest concerns the diagnosis of gallbladder disease, in the presence of both acute peptic ulcer and severe functional disorders in which there is pronounced pylorospasm, probably with associated spasm in the ampulla of Vater and cystic duct. In such cases the reaction to the Graham-Cole test may appear to be positive when the test is made in the presence of these acute conditions, but a week or ten days after the acute condition has been relieved by medical management a normal response to the Graham-Cole test is obtained, proving that the gallbladder had a functional but not a structural disorder.

Diagnostic problems with peptic ulcer are much commoner than might be expected from the fact that the history of uncomplicated ulcer has such a standard pattern. The occurrence of concomitant disease, as well as of complications of the disease itself, changes the clinical picture, sometimes to a decided degree. Joint observation and experience of both gastroenterologist and surgeon are usually required for the best therapeutic outcome.

Indications for surgical intervention in ulcer vary with the individual surgeon and gastroenterologist, but wherever there is harmonious cooperation the appraisal of good and bad end results of both medical and surgical treatment has resulted in the tempering—by humility—of initial enthusiasm for one or the other treatment and in the eager search for help by one from the other. The surgeon is willing to have only the intractable duodenal or jejunal ulcer or the gastric ulcer suspected of malignant disease referred to his care, and the gastroenterologist eagerly seeks his aid when this becomes necessary.

The question of intractability is indeed a relative one. The tendency of this disease to recur after any form of treatment makes it necessary that the newer radical procedures be used only when indicated by absolute failure of conservative measures. Particularly, is it important that conservative measures be given a truly adequate trial, and without careful investigation into the adequacy of such measures an immature appraisal often leads to unnecessary operation. On the other hand, penetration of a truly recalcitrant ulcer into the essentially important region of the common duct with its plastering effect on that vital area makes the inevitable surgical procedure extremely difficult and sometimes impossible of ideal execution. Ulcers of the second portion of the duodenum should, therefore, probably have an earlier diagnosis of intractability than those in areas where less vital structures may be involved. The criterion of intractability is, therefore, dependent on careful analysis of previous treatment and the type and location of the ulcer. Much has been said in discussions of peptic ulcer about the intractable patient versus the intractable ulcer. It cannot be too often emphasized that unless such a patient is so impressed by the gravity of a surgical procedure that he will postoperatively become a tractable patient his intractability will operate with as much disadvantage to him postoperatively as it did during his medical regimen. In other words, surgical intervention alone has proved to be no panacea for the intractable patient.

Postoperative care in ulcer often challenges the best efforts of the gastroenterologist and surgeon. Patients about to have gastric resection should be freed from any preoperative illusion that resection gives them emancipation from all medical restrictions. The incidence of jejunal ulcer after resection is sufficiently high to make it necessary that medical care be continued postoperatively and establishes the fact that the operation is an added therapeutic procedure, but not a substitution.

Postoperative complications after resection for ulcer often tax the clinical judgment of both gastroenterologist and surgeon. As an illustration of this fact, there is the patient who has had gastric resection and who returns with new complaints of abdominal distress. The question arises: has this patient a jejunal ulcer, a postoperative dumping syndrome, a functional disorder of the colon or a new organic lesion unrelated to his previous ulcer and resection? Meticulous observation and investigation may be required to differentiate. Pain to the left of the umbilicus, tenderness with fluoroscopic examination over the stoma and a residual fleck of barium sulfate at the site of tenderness indicate a jejunal ulcer, and this or any other new organic lesion should be found with careful study. The dumping syndrome or a functional disorder of the colon is suspected if neither jejunal ulcer nor new organic lesion is found, and the diagnostic study, especially the history and roentgenologic observations, indicates which of these conditions exists. Not infrequently, a functional colonic disorder is induced by ulcer therapy, particularly if the silicates and magnesium have been used.

Obstruction is a complication of ulcer which, while often thought to be definitely an indication for surgical intervention, is equally often observed to be a transient condition due to edema and inflammation and not to cicatricial stenosis. A period of observation with alternate feeding and drainage, known at the Lahey Clinic as the Wilkinson drainage method, because first devised by Dr. S. Allen Wilkinson, is usually an effective method of differentiation between transient and permanent obstruction and helps in the assignment of such cases to medical or surgical treatment.

Hemorrhage in peptic ulcer is a complication which, as time and ulcer experience go on, often has been found to test the clinical acumen and judgment of both gastroenterologist and surgeon. The diagnosis of ulcer in gastrointestinal bleeding is often difficult to establish, even with surgical exploration. One point of interest worth noting is that some of these apparently obscure bleeding ulcers are located in the second portion of the duodenum, and their presence is indicated roentgenologically by a narrowing of that area with a paradoxic dilatation distal to the ulcer, a sign first called to our attention at the Lahey Clinic by Dr. Wilkinson, of our staff.

Ulcer bleeders have a deplorable tendency to bleed after all forms of treatment, medical and surgical. Patients with such conditions, with histories of multiple hemorrhages, must receive special and intensive postoperative treatment after resection, for statistics are gradually accumulating which indicate a considerable percentage of hemorrhage following even very high resections. The whole problem of ulcer hemorrhage requires cooperative study by surgeon and gastroenterologist.

Newer surgical and medical procedures for ulcer should have the consideration and appraisal of both gastroenterologist and surgeon. For example, the two newer methods of treatment—the surgical procedure of vagotomy and the hormonal approach to treatment with enterogastrone and other hormonal extracts—require analytic appraisal of results before general adoption is recommended. The American Gastroenterological Association, through its Committee for the Study of Peptic Ulcer, is at present engaged in such an appraisal on a national level and intends to obtain a final opinion of their value as indicated by end results.

Such end results can, of course, be truly appraised only with time, the determining factor in all ulcer statistics, but already enough time has elapsed in the case of vagotomy results to indicate the trend of results and the presence or absence of untoward side effects. The cooperation of surgeon and gastroenterologist is essential to effect such an appraisal, the result of which will be either the promotion or the condemnation of this procedure. While less important from the point of view of life and safety of the patient, the hormonal approach to treatment also requires current appraisal, so that if this proves illusory, opportunity for other forms of treatment in the individual case will not be sacrificed.

Of equal importance with peptic ulcer, and it may not be amiss to say perhaps in the same category, are the inflammatory and ulcerative diseases of the small and large intestines, especially the so-called regional enteritis and nonspecific ulcerative colitis. When attention to the inflammatory and stenosing disease of the small intestine was first called by Burrill Crohn about fifteen years ago, it was thought that this was a specific disease of the terminal ileum. In fact, the name given it was terminal ileitis. Surgical and gastroenterologic observations since that time have shown that this disease process may involve not only the terminal ileum, but any part of the small intestine, either in one part or in patches, with skip areas, and, furthermore, that it may also affect the cecum and ascending colon. In fact, not a few gastroenterologists have expressed the opinion that it may well be essentially the same disease as nonspecific ulcerative colitis. Both diseases share with peptic ulcer the characteristic of tendency to recurrence.

The problem of when surgical treatment should replace medical treatment in these two diseases can be answered only by cooperative observations of both surgeon and gastroenterologist. The possibilities of improvement with continued medical treatment, together with the desire to avoid loss of small intestine or colon and the disadvantages of ileostomy, have to be weighed against the possible spread and further involvement of small intestine and, in both diseases, a possible fatal outcome. The interests of each patient require the greatest degree of cooperative thought and action of both gastroenterologist and surgeon.

The diagnosis of gallbladder disease has undergone varying criteria during the last decade—entirely because of correlation of gastroenterologic and surgical experience. With the exception of the rare polyp, cancer of the gallbladder and empyema without stones, cholelithiasis is the one diagnosis which has been proved an indication for operation. The universally accepted and indispensable Graham-Cole test is interpreted as revealing the presence of stones only if it completely fails to visualize the gallbladder in the absence of an acute condition elsewhere in the abdomen and if it actually shows the stones by consistently appearing radiolucent or opaque shadows. Faint filling, delayed emptying and all the other variations of visualization which were at first thought to be significant of organic disease have been demonstrated by the cooperative observations of surgeon and gastroenterologist to be chimeras, due undoubtedly to transient disturbances in function and not requiring surgical treatment.

The diagnosis of cancer of the digestive tract, in spite of concerted effort of surgeon and gastroenterologist, remains unsatisfactory because it is too often too late. Special effort is now being directed toward that most insidious and most frequently seen form, namely, cancer of the stomach. In about 20 per cent of cases of this disease the lesion first appears in the form of an ulcer, and in these 20 per cent, about one tenth of the lesions have the appearance of a benign ulcer when first seen and must be differentiated from the truly benign ulcer which may be healed and remain healed.

It therefore becomes a matter of vital importance to distinguish between the benign and the malignant or potentially malignant ulcer. Complete healing, as demonstrated by complete disappearance of the crater, gastroscopically and radiologically, and a return of unimpaired flexibility of the wall of the stomach, is the decisive point on which the benign character of the lesion may be judged. But, in addition, the correlated surgical and gastroenterologic experience of the past twenty years has demonstrated that that healing must not be disturbed by recurrence, if this benign character is to be trusted.

In other words, recurrent ulcer must be suspected of harboring cell changes which may transform it to a malignant lesion. This fact indicates the absolute necessity for the most careful follow-up of all gastric ulcers and for resection of all which remain incompletely healed or which recur. This is only one instance of cancer of the digestive tract in which the cooperative efforts of gastroenterologist and surgeon may advance early detection.

The subject, correlation of gastroenterology and surgery, could be elaborated far beyond the points discussed in this paper. But perhaps this discussion may suggest the extent of mutual aid and satisfaction which can be derived from reciprocal relations of these two branches of medicine under ideal conditions of trust and understanding. In conclusion and at the risk of being repetitious, I would exhort the gastroenterologist to follow up his patient through the operating room to his immediate and protracted postoperative life and to keep his surgical colleague well informed on his observations, for the well-being of that patient is the objective of their efforts and excellence of end results is the goal of both.

LONGEVITY IN RHEUMATIC FEVER

Based on the Experience of 1,042 Children Observed Over a Period of Thirty Years

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and
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The relative importance of rheumatic fever as a cause of death has been stressed in recent years. It has been estimated that for each death of a person under 20 years of age due to the combined causes of pertussis, diphtheria and poliomyelitis there were 50 deaths due to rheumatic disease of the heart.[1] The United States vital statistics reports for 1944 list deaths from rheumatic fever as 0.1 per 100,000 population and the death rate for rheumatic disease of the heart as 20.4 per 100,000 population, in comparison with the crude death rate of 1,040 per 100,000 for all causes. The Metropolitan Life Insurance Company reported deaths in school children due to rheumatic fever, including rheumatic disease of the heart, as 5 to 6 per 100,000 among industrial policy holders.[2] These mortality statistics emphasize the public health aspects of rheumatic fever, but have limited prognostic value.

Of greater concern to the physician is the determination of longevity in rheumatic fever, i.e., the prospects for an affected child to survive childhood and puberty and to reach adulthood. We have attempted to answer these questions from a consideration of the mortality experience in a group of 1,042 children who have been under our medical supervision during the years 1916-1947. The maximum period of observation was therefore about thirty years for those who came under observation in 1916, and the period of observation was progressively shorter for those whose first observation occurred in later years. Obviously, this time is insufficient for observing the complete life span in every patient, but it is of sufficient length to provide information as to the relative chances of surviving during the first four decades of life.

The conventional method for estimating the chance for survival in specific population groups is by the construction of a life table. The average mortality rates within a stated period following onset are determined (i.e., the ratio of deaths to person years of life experience). From the mortality rates, the risk of death during the specified interval may be determined, and from this figure the chance of survival from the beginning to the end of the interval may be obtained. This method, therefore, permits data as to the chances of survival from onset to any stated period to be accumulated. If these data can be obtained for the entire life span, the average life expectancy, i.e., the average number of years after onset, may be computed. Since our group was under observation for a maximum of thirty years, only a partial life table may be derived, and only the chance of survival to the maximum age in the life table may be ascertained.

The usefulness of the life table technic has been demonstrated by life insurance companies and public health services. Recently, its applicability to prognosis following operative procedures was demonstrated.[3] The methods for constructing abridged life tables have been simplified and are readily applicable to studies of chronic disease. In our studies the abridged life table technic described by Reed and Merrell has been used.[4]

For this study, the records of 1,042 rheumatic patients were reviewed. Eleven per cent of these patients were lost from observation at various points in the follow-up period, but 89 per cent were observed until death or the end of the study (July 1, 1947).

DESCRIPTION OF THE DATA

Before considering the mortality experience of these patients, it is necessary to describe the character of the sample.

Coming under observation from 1916 to 1922 were children referred from the Cornell Clinic. From 1922 to 1932, patients entered the Cardiac Clinic by referral from schools and the New York Nursery and Childs Hospital Children's Clinic and hospital wards. After 1932, rheumatic patients were referred to the Cardiac Clinic from the New York Hospital Children's Clinic and wards. In addition, rheumatic siblings of patients already attending the Cardiac Clinic were brought under observation. Rheumatic patients in whom the onset was presumably after puberty are not included in this series.

All of these patients were under close medical supervision during the entire period of observation, which included adolescence and adult life for those who reached it. About two thirds of the children were from families of the social and economic level usually encountered in a clinic in the city of New York. The remainder were from families of a somewhat higher economic level. The economic level has been higher for the majority of adolescent and adult patients during the past fifteen years.

The diagnostic criteria used in the study conformed to the "Requirements of Cardiac Clinics" of the New York Heart Association. A more detailed description of the medical follow-up of this group has been published.[5]

The age at last observation or at death and the sex distribution of the 1,042 patients is presented in table 1. It will be noted that 257 (25 per cent) were 1 to 15 years of age and that 785 (75 per cent) had reached the ages of 16 to 42 years.

The number of deaths by causes and age groups in which they occurred are summarized in table 2. Within the period of observation, 226 patients died. So far, two thirds of the deaths have occurred in the 1 to 15 year age group. Of the 226 deaths, 75.7 per cent were ascribed to rheumatic disease of the heart and 10.2 per cent to subacute bacterial endocarditis. The incidence of subacute bacterial endocarditis in the entire group of patients was 2.2 per cent. In 37 per

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Dr. Margaret Merrell gave constructive criticism and suggestions.

From the New York Hospital and the Department of Pediatrics, Cornell University Medical College.

Because of lack of space this article has been abbreviated in The JOURNAL. The complete paper will be found in the authors' reprints, which the authors will be pleased to send on request.

[1] Mustard, H. S.: *Rheumatic Fever in the Perspective of Public Health*, Am. J. Med. **2**: 609-617, 1947.

[2] Health Problems of School Age Children, Statist. Bull. Metrop. Life Insur. Co., **28**: 4, 1947.

[3] Berkson, J.: The Construction of Life Tables and the Use of the Method for Calculating Survival After Operation, Proc. Staff Meet., Mayo Clin. **9**: 380-385, 1934.

[4] Reed, L. J., and Merrell, M.: A Short Method for Constructing an Abridged Life Table, Am. J. Hyg. **30**: 33-62, 1939.

[5] Wilson, M. G.: Rheumatic Fever, New York, The Commonwealth Fund, 1940.

cent of the deaths, verification of the cause of death was obtained by postmortem examination. In most instances, death was due to active rheumatic carditis.

The mean age at onset of rheumatic fever was 6.5 years. The average length of observation in this study was 14.8 years. In the various analyses which were made, no significant sex difference was observed.

The incidence of the various rheumatic manifestations experienced during the course of the disease is presented in table 3. In 7 per cent of the group of 1,042 patients, active carditis occurred as the only manifestation during the observed course, 25 per cent experienced one or more attacks of chorea, 58 per cent had polyarthritis with or without chorea and in 10 per cent there were recurrent attacks of joint pains. In 45 per cent, active carditis occurred in association with other manifestations. A comparison of the various manifestations which characterized the course of the disease by age at last observation reveals that the incidence of active carditis in children who survive puberty is significantly lower in each age group. This is consistent with the natural history of the disease, since death during this period is due to active carditis. Two thirds of the deaths in our series occurred before puberty.

Table 1.—*Distribution of Patients by Sex and Age at Last Observation*

Age (Yr.)	Sex		Patients	
	Female	Male	Number	Percentage
1-15	130	127	257	25
16-19	103	88	191	18
20-29	224	199	423	41
30-42	112	59	171	16
Total 1-42	569	473	1,042	

Cardiac involvement was demonstrable in all of the patients, although active carditis was subclinical in about one half. The cardiac diagnosis for each age group at last observation or death is summarized in table 4. It will be noted that there were multiple valvular lesions in less than half (41 per cent) of the patients between the ages of 20 and 29 and in more than two thirds (71 per cent) of the patients between the ages of 30 and 42. There was moderate or decided cardiac enlargement in about one half of the patients in both of these age groups. It must be emphasized that in about one third of the patients the auscultatory signs of valvular lesions regressed during the period of observation. Auricular fibrillation occurred in 38 patients (4 per cent). Less than half of the patients with auricular fibrillation have survived. In 4 living patients, auricular fibrillation has been present for an average of fifteen years.

Of particular importance is the observation that about 90 per cent of the patients from 20 to 42 years of age were able to carry on their normal activity without circulatory symptoms. One hundred and sixty-seven men served in the armed forces, and 162 women experienced a total of 288 pregnancies.[6] From these figures it is apparent that the morbidity due to rheumatic disease of the heart is low after puberty. This is consistent with a previous observation that the average annual rate of recurrence after puberty is also low (3.7 per cent).[7]

LONGEVITY IN RELATION TO DURATION OF DISEASE

To determine longevity in rheumatic fever, mortality rates were calculated for 1,042 patients representing 15,336.75 person years of life experience. From these rates the probability of survival could be ascertained in relation to the years since onset of the disease and the age of the patient (fig. 1).

In table 5 the mortality rates for the 1,042 patients are presented for specific intervals in the years following the onset of the disease (columns 7 and 8). It is apparent that the highest mortality occurs within the first year after onset. The death rates for one to thirty years after onset are remarkably constant.

Computation of the risk of death during any specified time interval reveals that there are 4 chances in 100 of death occurring within one year after onset of the disease (column 9). The risk of death from the first to the fifth year after onset is 5 chances in 100 and increases to 8 chances in 100 during the fifth to the tenth year after onset. In comparing these risks it must be recognized that the probability of death during an interval is dependent on the length of that interval. Therefore, the chance of death in the first year after onset is about three times as great as in most of the subsequent single years.

There is a slight but significant increase in the risk of death from the fifth to the tenth year after onset in comparison with the previous period. Analysis of this experience by age reveals that in a large proportion of the cases, this is the age of puberty (table 7). It is apparent that the age factor is more important than the time after onset. After the period five to ten years after onset, the rates are remarkably constant. Accumulation of the figures for the risks of death, to give the survival rate from onset to any specified number of subsequent years (table 5, column 10), it may be observed that the fifteen year survival rate is 80 per cent, the twenty year survival rate is 75 per cent and the thirty year survival rate is 66 per cent.

It is interesting to note that the median duration of life (the number of years which half of the children would survive) is evidently considerably greater than thirty years. If the constancy of the rates after puberty should persist for three additional five year periods after thirty years, the median would be about forty-five years after onset. This extrapolation beyond the computed figures appears to be a reasonable assumption.

Table 2.—*Death by Age and Cause*

Age, Yr.	Number of Patients	Total Deaths	Number of Deaths						
			Cardiac Causes		Noncardiac Causes				
			Rheumatic Heart Disease	Bacterial Endocarditis	Tuberculosis	Infectious Diseases	Neoplasm	Accident	Undetermined
1-15	257	138	116	9	2	7	1	3	..
16-19	191	41	29	5	1	1	1	3	1
20-29	423	37	19	8	2	2	..	5	1
30-42	171	10	7	1	..	..	..	2	..
1-42	1,042	226	171	23	5	10	2	13	2

From these observations, it is apparent that there is a decided difference between our figures and those given by Cohn and Lingg.[8] In their study the mean duration of life from onset to death was about thirteen years.

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[6] Wilson, M. G.; Payson, J. W., and Lubschez, R.: The Experience of Rheumatic Patients in the Armed Forces, Am. J. Pub. Health, to be published.

[7] Wilson, M. G., and Lubschez, R.: Recurrence Rates in Rheumatic Fever, J A. M. A. **126**: 477-480 (Oct. 21) 1944.

[8] Cohn, A. E., and Lingg, C.: The Natural History of Rheumatic Cardiac Disease, J. A. M. A. **121**: 1-8 (Jan. 2) 1943.

They based their figures on an analysis of deaths alone, ignoring the experience of the survivors. This procedure always results in an underestimation of life expectancy. The extent of the underestimation varies inversely with the length of follow-up. This is the severest type of sampling bias, since it is only the persons who die earliest, i.e., the poorest risks, who are used to determine the prognosis figures.

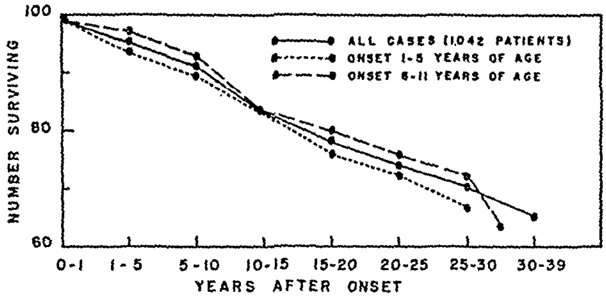

Fig. 1.—Longevity in relation to duration of disease.

It seemed pertinent to determine whether the age at onset is related to the prognosis. Tables were constructed for children with onset from 1 to 5 years and 6 to 11 years of age. Comparison of the mortality rates in the two groups (table 6, columns 7 and 8) revealed that there were no unusual differences according to early or later onset of the disease, demonstrating that the age at onset is not an influential factor.

The over-all comparability of the rates is indicated by the similarity of the survivorship values (table 6, column 10). However, certain differences are noteworthy. There is a higher first year mortality for children who are 1 to 5 years of age at onset, in comparison with those whose onset occurred between the ages of 6 and 11 years. The increased risk of death during the sixth to the tenth year after onset persists to the fifteenth year for those with onset between 1 and 5 years of age and appears earlier after onset among those with onset between 6 and 11 years of age. This again indicates the increased risk at puberty.

LONGEVITY IN RELATION TO AGE

Since it is important to estimate the prognosis of the disease in terms of the age of the patient, age-specific mortality rates were computed for the entire sample (fig. 2). In table 7 (column 9) it may be noted that a mortality rate twice as high as the over-all mortality rate was obtained for children between the ages of 1 and 4 years (33.2 per thousand). A slightly increased rate of 18.2 per thousand was observed for children between the ages of 10 and 14 years, in comparison with the over-all death rate of 14.7 per thousand.

Figures for the risk of death during a specified age interval were computed from these rates and revealed (table 7, column 11) that the probability of death during the period from 1 to 4 years is 11 chances in 100. For children reaching age 5, 7 out of 100 die before reaching age 10. In the group from age 10 to 15, 9 out of 100 who reached age 10 will die, and, in the age group 15 to 20 years, 7 out of 100 die. Of 100 children who reach age 20, 5 die before 25 years, and the risks are the same in the period from 25 to 30 years.

An accumulated survivorship curve may be derived from these risks. Its interpretation is not as clearcut as the survivorship values calculated on the basis of years since onset, which have been considered previously. In the present table, children are entered at various ages, depending on the age at which onset occurred. In spite of this heterogeneity of material, the survivorship values give a prognosis for children whose onset of rheumatic fever occurred subsequent to age 1. Seventy-five per cent of the children survive from age 1 to age 15 and 55 per cent from age 1 to age 40. Of those who survive to the age of 15, 72 per cent survive to age 40.

It seems important to determine whether our sample was representative of the general population in New York in other respects than rheumatic disease of the heart.

The mortality rates from all causes in New York for the years 1919 to 1920 (table 7, column 13),[9] the median year of the sample, were applied to the person years of our sample to obtain the expected number of deaths in our sample (table 7, column 14). It was observed that about twice as many deaths were expected as the total number of deaths from noncardiac causes observed in our sample. Thus, either the sample was not representative of the general population or the careful medical supervision given these patients may have been an influential factor in reducing the number of deaths due to noncardiac causes.

In the past few decades there has been a notable improvement in the general care of children. The mortality rates for children born between 1900 to 1919 and 1920 to 1939 were compared to determine whether there was any significant difference which might be attributed to the improved care of children in recent years.

In table 8 the age specific mortality rates for children born before and after 1919 (columns 9 and 10) are tabulated. Except for three specific age groups, i.e., 1 to 4, 10 to 14 and 15 to 19, there was no significant trend in the mortality rates for the periods before and after 1919. The difference in the age group 1 to 4 years (i.e., 16.3 before and 37.5 after 1919) is associated with such small numbers that it cannot be interpreted. One more death would have equalized the rates. For children born before 1919, the death rates at ages 10 to 14 and 15 to 19 were 26.4 and 22.2 per thousand, respectively, in contrast with 11.9 and 8.2 per thousand for children born after 1919.

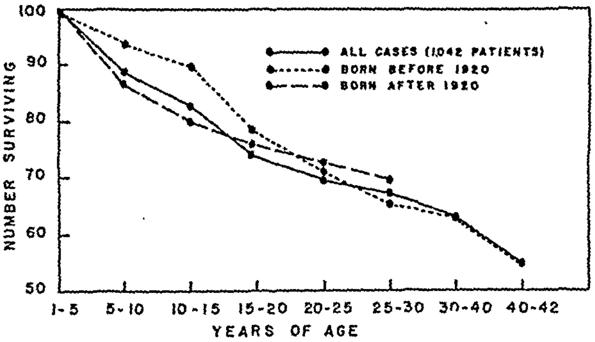

Fig. 2.—Longevity in relation to age.

The differences in the age group 10 to 19 years may in part be attributed to the sources from which the two samples were drawn over the thirty year period of observation.

From 1916 to 1921, only ambulatory children entered from the clinic. Between 1923 and 1930, younger children entered the study from the hospital wards. From 1932 to 1947, sick chil-

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[9] Summary of Vital Statistics, 1898-1946, Department of Health (New York City), Bureau of Records and Statistics, Statistical Division, 1947.

dren of all ages were referred to the clinic from the hospital wards. Since the ward referrals represent the more severely affected group in our sample and ward referrals did not begin until after 1922, this is reflected in the higher mortality rates in the 10 to 19 age group born before 1920.

Since the differences in the mortality rates for patients born before and after 1920 may be accounted for by differences in the sample, there is no evidence that improved care and nutrition during the past twenty years affected the mortality rate in rheumatic fever.

COMMENT

These observations have the advantage that the medical supervision has been uniform and the patients have been under close observation throughout the entire course of the study.

The sample may be considered representative for rheumatic children living in New York who attend clinics or are admitted to hospitals. The clinical course of the disease experienced by these patients comprised all patterns of rheumatic fever having its onset in childhood.

Interpretation of the mortality rates in rheumatic fever must take into account possible selective factors. Obviously, the mortality rates would be higher if all the patients were drawn from the hospital wards than if selection were limited to clinic attendance. Selective factors may have contributed to the higher death rates in the 1 to 4 year age period in this study because the majority of the children were admitted to the hospital and succumbed to their first severe attack of active carditis. Affected children of this same age group suffering minor manifestations of the disease are small in number and usually are not recognized until a major recurrent attack of rheumatic fever brings them to a clinic for examination.

It must also be borne in mind that analysis of data obtained from a children's clinic cannot be compared with studies derived solely from adult cardiac clinics. In the latter, only historical information is available for the childhood course of the disease. Furthermore, children who did not survive puberty are not represented. There are also likely to be excluded adult survivors who do not attend a clinic because they are not troubled by recurrent attacks of rheumatic fever or circulatory symptoms. This is particularly important, since it has been shown that the morbidity for the 20 to 30 year age period is low.

This study is limited to a consideration of the longevity of affected children for the first four decades of life. The exclusion of patients presumably with onset after puberty is not pertinent.

The complete life expectancy in rheumatic fever has never been presented. To give a complete estimate of the average future lifetime of rheumatic patients, it would be necessary to follow all of a group to death or to use data representative of all ages.

It is possible, however, to determine survival after onset up to the most advanced age observed. In doing this, it is essential to take into account every person who enters the study for as long a time as he is present. The present study is the first analysis of survivorship in rheumatic fever which takes these factors into account.

It must be borne in mind that during childhood death is due to active carditis. The severity of any one attack and the number of recurrent attacks with resultant cardiac damage influence the ultimate prognosis in each patient.

The low mortality and morbidity rates after puberty among the survivors should be emphasized. Although there was demonstrable cardiac involvement in all of the patients, 90 per cent were able to carry out their normal activity at last observation.

It is of interest that the improvement in general care and nutrition in the past few decades did not appear to be reflected in decreased mortality rates for the children born after 1920.

SUMMARY

The records of 1,042 children who were under observation over a thirty year period of observation, from 1916 to 1947, are reviewed. Eighty-nine per cent of the patients were seen at death or at the end of the study.

The mean age at onset was 6.5 years. The average length of observation was fourteen and eight-tenths years.

At last observation, 25 per cent (257) were between the ages of 1 and 15 years and 75 per cent (785) were from 16 to 42 years of age.

Among 226 deaths, 75.7 per cent were due to rheumatic disease of the heart and 10.2 per cent to subacute bacterial endocarditis. The incidence of subacute bacterial endocarditis in this series of 1,042 patients was 2.2 per cent.

The clinical course of the disease was characterized by active carditis alone in 7 per cent. In 25 per cent there were one or more attacks of chorea; in 58 per cent polyarthritis occurred with or without chorea, and 10 per cent had joint pains. Active carditis was clinically recognizable in only 45 per cent of these patients.

Cardiac involvement was demonstrable in every patient at last observation. Multiple valvular lesions and moderate or decided enlargement of the heart was observed in about one half of the patients. Auricular fibrillation occurred in 4 per cent of the patients.

There was regression of auscultatory signs of valvular lesions in one third of the group.

Ninety per cent of the patients who were 21 to 42 years of age at last observation were able to carry on their normal activity without circulatory symptoms. One hundred and sixty-seven men served in the armed forces, and 162 women experienced a total of 288 pregnancies.

The mortality experience among 1,042 rheumatic patients representing 15,336.75 person years of life experience is presented.

Analysis revealed no significant sex difference in the age-specific mortality rates.

The mortality rates indicate that there is an increased risk at puberty irrespective of age at onset of the disease. The highest mortality rate occurred within one year of onset.

The over-all death rate was 14.7 per thousand per year.

The highest death rates occurred between the ages of 1 and 4 years (33.2 per thousand) and 10 to 14 years (16.3 per thousand).

A comparison of age-specific mortality rates for children born before and after 1919 showed no difference attributable to improvement in general care and nutrition during the past twenty years.

The longevity in rheumatic fever for the first four decades of life is presented.

An affected child has 4 chances out of 5 to survive fifteen years after the onset of the disease, 3 chances out of 4 to survive twenty years after onset and 2 chances out of 3 to survive thirty years after onset.

The median duration of life for rheumatic children is greater than thirty years after onset.

An affected child has 4 out of 5 chances to survive childhood (to the age of 10 years), 3 chances out of 4 to survive puberty and 19 chances out of 20 to survive early adult life.

The over-all chance to survive to the age of 40 years is 1 out of 2.

525 East Sixty-Eighth Street.

APICAL PULMONARY CARCINOMA AND TUBERCULOSIS

The Value of Sputum Cell Study in the Differential Diagnosis

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The differentiation of apical pulmonary tuberculosis from apical pulmonary carcinoma on clinical and radiologic grounds is often difficult. Since as high as 52 per cent of all carcinomas of the lung occur in the upper lobes,[1] this differentiation is a perplexing and not infrequently occurring problem. The location of these lesions frequently prevents the bronchoscopist from obtaining a biopsy specimen or even visualizing the pathologic process.[2] Since tuberculosis is usually treated medically, whereas carcinoma demands early radical surgical treatment, an accurate diagnosis is of extreme importance. In 1943 a series of 164 cases of carcinoma of the lung reported by Overholt [3] revealed that 63 per cent were misdiagnosed by the first physician consulted. In this group of pulmonary carcinomas, tuberculosis was the incorrect diagnosis in 38 per cent. In a report of the mistaken diagnosis of tuberculosis as encountered in a sanatorium by Kaplan and Levin,[4] carcinoma of the lung accounted for 18 per cent of the misinterpreted pulmonary lesions. These figures indicate the frequency with which this problem arises. Therefore, any additional procedure which helps to reduce the incidence of this not uncommon diagnostic error would be of the utmost value.

Exploratory thoracotomy, a rather drastic procedure for obtaining a biopsy specimen, needle aspiration, with its dangers and inadequacies,[5] and bronchoscopy, with its difficulty in visualizing the upper lobes, have heretofore been the only methods of procuring tissue for diagnostic study. The work of Dudgeon and Wrigley [6] and others [7] has established the examination of sputum for tumor cells as a procedure which will yield a positive diagnosis in from 60 to 88 per cent of carcinomas of the lung. However, the place of this diagnostic aid in the specific problem of the differentiation of apical tuberculosis from apical cancer has not been duly emphasized.

In the past several months we have examined the sputum of 158 patients, employing the technic described by Wandall.[7c] Three cases in this series were of special interest in that a diagnosis of carcinoma was made by sputum examination, at a time when the clinical diagnosis was tuberculosis or wavered between tuberculosis and carcinoma.

REPORT OF CASES

CASE 1.—A 60 year old white salesman had been under a physician's observation since the death of his two sisters from tuberculosis four years previous to his admission to the hospital. During this time he had had a chronic cough, productive of small amounts of grayish white sputum. From a roentgenogram of the chest taken one year prior to admission, diagnosis of an active tuberculous process was made. However, the patient continued to feel well until three months before admission, when increasing exertional dyspnea, increased cough and weakness developed. He lost 6 pounds (3 Kg.) during this period. He was finally admitted to the hospital after an episode of severe pain in the right side of the chest.

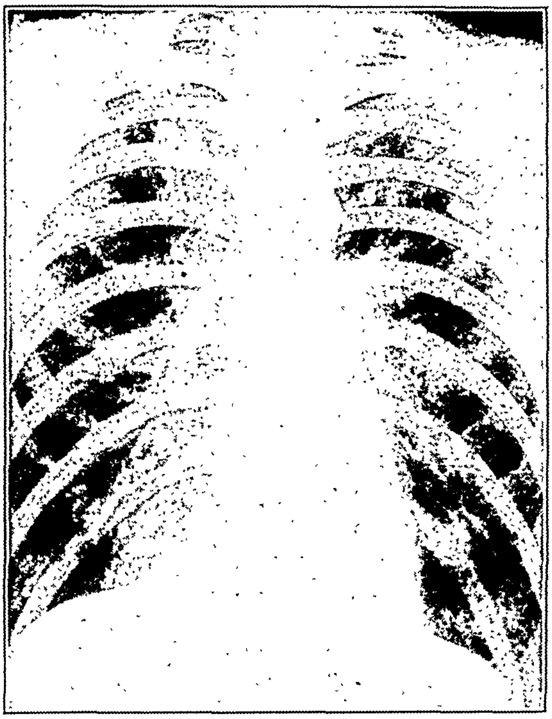

Fig. 1 (case 1).—Roentgenogram of the chest one year before diagnosis of carcinoma was made, showing infiltrate in the upper lobe of the right lung with suggestion of cavitation.

Aided by the David May-Florence G. May Fund.

From the Laboratory of The Jewish Hospital of St. Louis.

[1] Fischer, W.: Die Gewächse der Lunge und des Brustfells, in Henke, F., and Lubarsch, O.: Handbuch der speziellen pathologischen Anatomie und Histologie, Berlin, Julius Springer, 1931, vol. 3, pt. 3, pp. 509-607. Quick, D. W., Jr., and Brindley, P.: Primary Carcinoma of the Lung, Texas State J. Med. **43**: 627 (Feb.) 1948.

[2] Bailey, C. P.; Tropla, F., Jr., and Rubenstein, L. H.: Recent Advances in Pulmonary Surgery, S. Clin. North America **27**: 1373-1406 (Dec.) 1947.

[3] Overholt, R. H.: A Common Masquerading Lung Disease, Dis. of Chest **9**: 197-211 (May-June) 1943.

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[5] (*a*) Dolley, F. S., and Jones, J. C.: Surgical Treatment of Tumors of the Lung and Mediastinum, Am. Rev. Tuberc. **39**:479-487 (April) 1939; (*b*) Lobectomy and Pneumonectomy for Lung Suppuration and Malignancy: Comprehensive Analysis Including Authors' Series, Journal-Lancet **59**: 162-168 (April) 1939. (*c*) Ochsner, A.; DeBakey, M., and Dixon, J. L.: Primary Cancer of Lung, J. A. M. A. **135**: 321-327 (Oct. 11) 1947.

[6] Dudgeon, L. S., and Wrigley, C. H.: On the Demonstration of Particles of Malignant Growth in the Sputum by Means of the Wet Film Method, J. Laryng. & Otol. **50**: 752-763 (Oct.) 1935.

[7] (*a*) Barrett, N. R.: Examination of the Sputum for Malignant Cells and Particles of Malignant Growths, J. Thoracic Surg. **8**: 169-183 (Dec.) 1938. (*b*) Gowar, F. J. S.: Carcinoma of the Lung: The Value of Sputum Examination in Diagnosis, Brit. J. Surg. **30**: 193-200 (Jan.) 1943. (*c*) Wandall, H. H.: A Study of Neoplastic Cells in Sputum as a Contribution to the Diagnosis of Primary Lung-Cancer, Acta chir. Scandinav. (supp. 93) **19**: 1-143, 1944. (*d*) Papanicolaou, S. N.: Diagnostic Value of Exfoliated Cells from Cancerous Tissues, J. A. M. A. **131**: 372-378 (June 1) 1946. (*e*) Herbut, P. A., and Clerf, L. H.: Cancer Cells in Bronchial Secretions, M. Clin. North America **30**: 1384-1392 (Nov.) 1946. (*f*) Woolner, L. B., and McDonald, J. R.: Bronchogenic Carcinoma: Diagnosis by Microscopic Examination of Sputum and Bronchial Secretions; Preliminary Report, Proc. Staff Meet., Mayo Clin. **22**:369-381 (Sept. 3) 1947.

Physical Examination.—The patient's temperature was 98.6 F. and pulse rate 90; respirations were 20. He was undernourished. The noteworthy observations were limited to the chest. Expansion was the same on both sides. Over the upper lobe of the right lung, anteriorly, tactile fremitus was slightly impaired, percussion note was dull, breath sounds were diminished and occasional expiratory moist rales were heard.

Laboratory Observations.—The red blood cell count was 5,400,000, hemoglobin 104 per cent, and white blood cell count 15,400, with a slight shift to the left in the differential count. Results of sputum examinations for acid-fast bacilli were negative. The remainder of the laboratory observations were within normal limits.

A review of the roentgenograms obtained from the patient's physician (taken three years before admission) revealed the presence of increased peribronchial markings, extending from the hilus to both apexes. One year before admission a 3 by 2 cm. subapical infiltrate was seen in the upper lobe of the right lung. This contained a small area of rarefaction, suggesting early cavitation (fig. 1). A roentgenogram of the chest taken on admission showed a decided increase in size of the area of infiltration. A bronchoscopic examination was made the day following admission, and no endobronchial lesion could be detected. However, some sputum was aspirated from the right main bronchus. Examination of these secretions showed the presence of one clump of 5 large atypical epithelial cells. Their nuclei were relatively large and hyperchromatic and contained prominent deeply stained nucleoli. The diagnosis was neoplastic cells in the sputum (fig. 2).

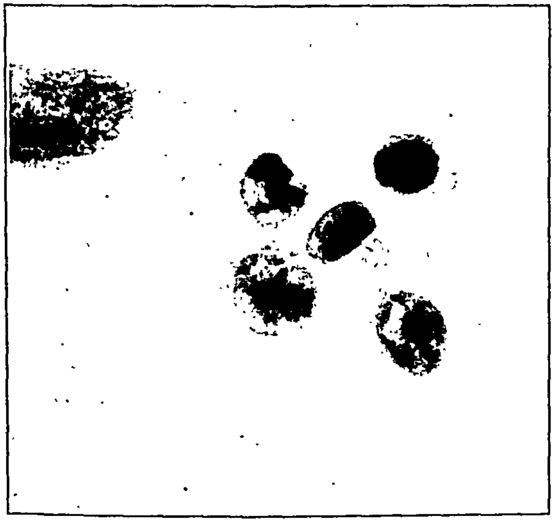

Fig. 2 (case 1).—Five large cancer cells with large nuclei and nucleoli in the sputum (hematoxylin and eosin stain, × 1,320).

A right pneumonectomy was attempted. The lung was observed to be adherent to the anterior thoracic wall, and there was mediastinal infiltration. A small piece of pleural adhesion was obtained for biopsy. Severe hemorrhage was encountered in attempted separation of the lung from the thoracic wall. Despite all the usual measures, including massive transfusion, the patient went into shock and died. At autopsy an orange-sized tumor was seen in the upper lobe of the right lung. Microscopic examination of the specimen obtained at operation showed fibrous tissue invaded by small cords of anaplastic hyperchromatic epithelial cells. The diagnosis was bronchogenic carcinoma, undifferentiated.

Case 2.—A 57 year old white male coffee packer entered the hospital complaining of cough, weakness and weight loss of 27 pounds (12 Kg.) during the previous year. During this period he had had frequent colds, chills, fever and night sweats. Two months before admission his cough became productive of blood-streaked sputum, and one week prior to admission he had had a frank hemoptysis of "2 cups" of blood. His brother, with whom he lived, died of pulmonary tuberculosis; his mother died of "pneumonia."

Physical Examination.—The blood pressure was 155 systolic and 90 diastolic, temperature 100.8 F. and pulse rate 68; respirations were 24. The patient was a well developed poorly nourished white man of 57, who appeared chronically ill. Noteworthy observations were confined to the chest and extremities. Over the upper half of the right side of the chest, anteriorly and posteriorly, there were increased tactile and vocal fremitus, dulness to percussion, decreased breath sounds and whispered pectoriloquy. The extremities showed moderate clubbing of fingers and toes.

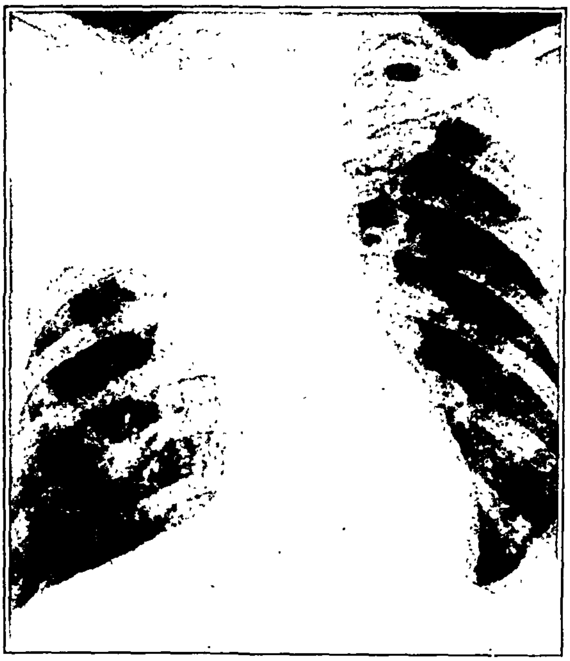

Fig. 3 (case 2).—Roentgenogram of the chest, showing upper lobe consolidation in the right lung. This was thought to be tuberculous pneumonia.

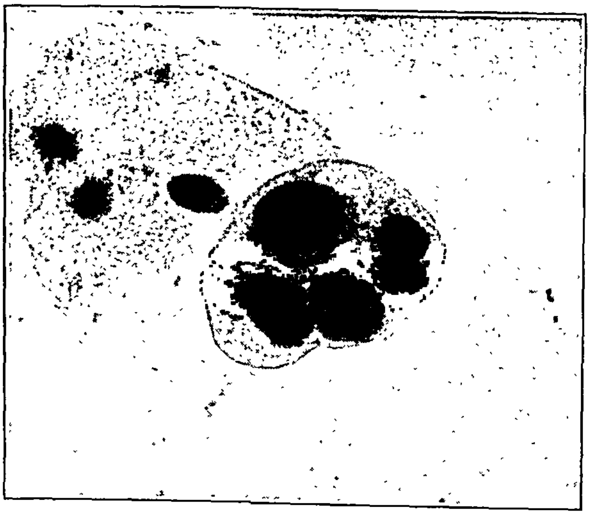

Fig. 4 (case 2).—Clump of hyperchromatic malignant cells in the sputum. Large nuclei and one large nucleolus are visible (hematoxylin and eosin stain, × 1,320).

Laboratory Observations.—The white blood cell count was 15,900, without appreciable shift in the differential count. The Kahn and Wassermann reactions were positive. Three sputum examinations failed to reveal acid-fast bacilli. Roentgenograms of the chest, taken on admission, showed a consolidation of the upper lobe of the right lung. This opacity was not homogeneous and contained small round shadows of decreased density. The trachea was slightly deviated to the right. These observations were thought to be consistent with consolidation in the upper lobe of the right lung, probably tuberculous in origin (fig. 3). Sputum examination revealed the presence of clumps of large epithelial cells of varying size. The nuclei were hyperchromatic and varied in size and shape. One or more deeply staining nucleoli were present in each nucleus. The diagnosis was neoplastic cells in the sputum (fig. 4).

Subsequently three bronchoscopies were done. Irregular thickening of the right mainstem bronchus up to and including the carina was seen. Three specimens obtained for biopsy failed to reveal cancer. The patient was considered inoperable, despite the negative results of biopsies, because of the bronchoscopically observed carinal involvement. He was given palliative roentgen therapy, but died three months after the diagnosis was made. At autopsy the upper lobe of the right lung was almost completely replaced by a firm grayish white tumor mass. A tumor thrombus occupied the pulmonary vein and extended into the left atrium. Metastases were seen in the right hilar lymph nodes, the right adrenal gland and the right kidney. Microscopically the tumor was composed of anaplastic spindle-shaped epithelial cells with prominent nucleoli. There was extensive fibrosis and necrosis, probably the result of the roentgen radiation. The diagnosis was bronchogenic carcinoma, squamous cell type.

Case 3.—A 49 year old white salesman complained of a chronic productive cough for the ten years prior to admission. He brought up about half a cup of mucoid sputum, but had no hemoptysis, night sweats, fever, chills or weight loss. Five days before admission he coughed up a small blood clot, and thereafter on one or two occasions the sputum was slightly blood streaked. There had been no hemoptysis since. Also for the past three to four months he had noted increasing clubbing of his fingers. From a roentgenogram of the chest, taken by his physician, the diagnosis was pulmonary tuberculosis.

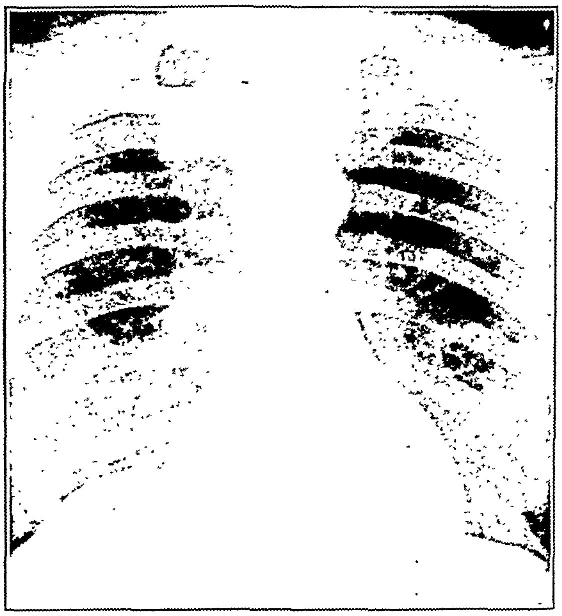

Fig. 5 (case 3).—Roentgenogram of the chest, showing infiltrate of the upper lobe in the right lung. The diagnosis was subapical tuberculosis.

On admission physical examination showed a blood pressure of 130 systolic and 80 diastolic, temperature 99 F., pulse rate 76 and respirations 20. The patient was well developed and well nourished and appeared to be in good health. The chest was normal to percussion and auscultation The extremities showed decided clubbing of the fingers and toes. The results of the remainder of the physical examination and the laboratory observations were not remarkable. A roentgenogram of the chest showed an area of increased density in the upper medial portion of the right lung, measuring about 6 by 5 cm. This density was continuous with the upper aspect of the right hilar shadow. The chest was otherwise entirely normal (fig. 5). The sputum was examined on the day following admission. It contained numerous clumps of large epithelial cells, which varied significantly in size. The nuclei were large and hyperchromatic, and some of the cells were multinucleated. In almost all of the nuclei one or more large deeply staining prominent nucleoli were present. The diagnosis was neoplastic cells in the sputum (fig. 6). Bronchoscopic examination was entirely without significant observations.

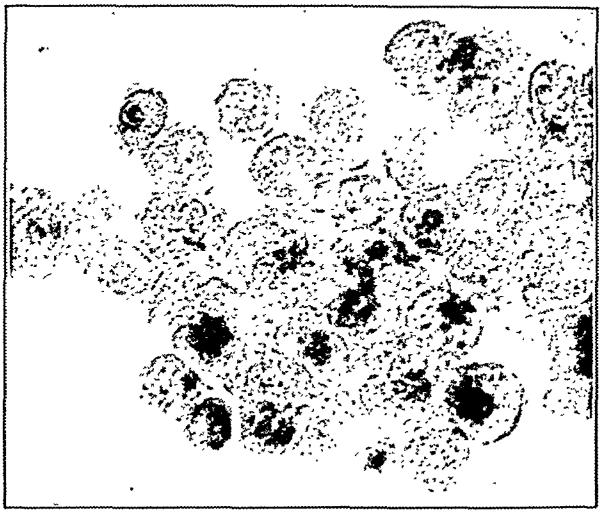

Fig. 6 (case 3).—Portion of a large clump of tumor cells in the sputum. The cells vary in size, and the nuclei and nucleoli are large (hematoxylin and eosin stain, × 1,320).

A right pneumonectomy was done by Dr. Mudd. Gross examination of the lung revealed a tumor arising from a secondary division of the upper lobe bronchus in the right lung, about 4 cm. from the main bronchial orifice. Microscopic examination of the tumor showed cords of anaplastic epithelial cells, which varied decidedly in size and shape. The cells had large vesicular nuclei and prominent nucleoli. The lymph nodes showed no evidence of metastases. The diagnosis was bronchogenic carcinoma, undifferentiated.

COMMENT

The cases presented exemplify the problem in the differential diagnosis of apical pulmonary disease and the aid that may be derived from the examination of sputum for tumor cells. Since tubercle bacilli are frequently not seen in early pulmonary tuberculosis, this diagnosis is often made on the basis of clinical and radiologic observations, without a serious attempt to exclude carcinoma. Furthermore, even when tubercle bacilli are identified in the sputum, the occasional coexistence of active tuberculosis and carcinoma must be borne in mind. Although this association had been uncommon, it may be encountered with greater frequency in the future as the life expectancy of tuberculous patients increases. Apical carcinoma must also be considered in a known arrested case of tuberculosis, when a change in the pulmonary lesion is demonstrated by roentgen examination. This is especially true in the older age groups.

Until recently the clinician has depended primarily on bronchoscopic biopsy for the diagnosis of pulmonary disease when the roentgenologic observations were inconclusive. However, bronchoscopic examination has several inherent shortcomings. The percentage of positive results of biopsies which can be obtained through the bronchoscope in proved cases of pulmonary carcinoma, irrespective of location, is only 42 to 62 per cent.[8] The percentage of failures is especially high when the lesions are situated in the upper lobes, for, unless the tumor is within a very short distance of the upper lobe bronchial orifices, it is beyond the reach of the endoscopist. While needle aspiration biopsy of the lung is a valuable procedure, we feel that it is too uncertain a method for use in the differential diagnosis of apical pulmonary lesions. The danger of entering a possible tuberculous lung or producing needle tract tumor transplants, not to mention its other complications, renders it unsuitable for this type of case. Exploratory thoracotomy should be employed only when all other means of diagnosis have been exhausted.

The outlook for patients with pulmonary carcinoma continues to be rather poor [9] and can be improved only by an accurate diagnosis early in the course of the disease, when resection is still possible. The examination of sputum for tumor cells offers a means of quickly establishing a histologic diagnosis. In our experience the incidence of tumor cells in the sputum has been highest in lesions of the upper lobes of the lungs, probably because of the better drainage of bronchial secretions from the upper lobes into the main bronchi, where they are readily expectorated. Thus, in the very cases in which bronchoscopy is oftenest of no help the sputum examination is most likely to give positive results. In the older age groups especially, sputum examination for neoplastic cells should be employed almost as routinely as the examination for tubercle bacilli in the diagnosis of apical pulmonary lesions.

SUMMARY AND CONCLUSIONS

Three cases are presented in which the observation of tumor cells in the sputum established a diagnosis of carcinoma of the lung when, clinically, tuberculosis was suspected.

Microscopic examination of the sputum for neoplastic cells is an important aid especially in the diagnosis of apical pulmonary lesions. In patients of the cancer age examination of sputum for the diagnosis of apical lesions should routinely include a search for tumor cells.

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[8] Overholt.[3] Ochsner, DeBakey and Dixon.[5c]

[9] Lambert, A.: Carcinoma of the Lung, Am. J. M. Sc. **215**: 1-12 (Jan.) 1948.

Six Years of Profound Changes.—The last six years have seen the initiation of more profound changes in scientific medicine than any period since the discovery of bacteria or the invention of the microscope. This change has been brought about by many factors: the wholesale uprooting incident to the war, the development of antibiotics, the impact of social legislation, but above all the advent of atomic energy. . . . When we think that six years ago the average man had no more concern with ionizing radiation than as a means of checking on an aching tooth or determining the cause of chronic cough, whereas today millions of people live within the shadow of possible war-time exposure to ionizing radiation from the atomic bomb; when we realize that six years ago it would be a skilled chemist who could detect after hours of work a millionth of a gram of phosphorus and now a technician with a Geiger counter can detect a fraction of a millionth of a gram of radioisotopic phosphorus in a few minutes, we can realize how long a road we have come in this short span.—Warren, Shields, M.D., *Bulletin of the Atomic Scientists*, August 1948.

DISEASES OF THE LACRIMAL GLAND AND OCULAR COMPLICATIONS

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For some years I have been interested in the lacrimal apparatus, at first mainly in the drainage of the lacrimal secretion, but more recently the lacrimal gland itself and its functions, together with some of its pathologic states. So much is unknown in this field that I thought I might attempt to gather a few of the known fragments and present them.

The lacrimal gland which secretes most of the tears in the conjunctival sac consists of two lobes; the orbital, the larger, about 20 mm. long, 12 mm. wide and 5 mm. thick, and the palpebral lobe, which is about one-half to one-third the size of the orbital one. It is wedged between the globe and the orbital wall, and the aponeurosis of the levator muscle is responsible for dividing it into the two lobes as the gland encircles its outer edge. This is well to remember when operations are to be performed either on the gland or on the muscle. According to Whitnall,[1] the lacrimal gland is a tubular racemose gland consisting of a mass of lobules, each lobule being made up of a collection of ramifying tubes, and each tube branching further into tubules or acini around a central canal the cells of which lie on a basement membrane. The large secreting type of cell occupies most of the acini and appears in different aspects, according to its secretory activity. The other type of cell is the flat myoepithelial cell, or the basket cell or so-called korbzelle, about which I shall speak later. Although there is a divergence of opinion about the appearance of the secretory cells and their secretory granules, it would seem that the function of the two kinds of cells is agreed on, namely, that the large cells secrete tears and the basket cells, by contracting, expel the secretion into the tubules. The tubules, which at first are intralobular, by joining with others become extralobular or collecting canals. These, by further joining, become the ducts of the gland, which are usually not more than twelve in number. The majority of these ducts come from the inferior lobe. They open into the conjunctival sac, mostly in the upper-outer angle of the fornix above the upper border of the tarsal plate, although one or two extend below the external ligament and open in the lower-outer part of the conjunctival sac. These lower ones are responsible for the occasional cyst found in this region. The ducts of the orbital gland usually traverse the inferior lobe in their course, which is an important anatomic point in the surgical treatment of excessive tearing by removal of the inferior lobe of the gland.

The cells of the acini are of a columnar shape and resemble the serous or albuminous cells of the salivary glands. There are no cells in the lacrimal gland comparable to the mucous cells of the salivary glands. The columnar cells contain fat droplets and large pale secretory granules which change in number, depending on the volume of the cell according to the stage of secretion.[2] Between these cells and the basement membrane, basket cells are to be seen. It is *difficult*, or impossible, to make out the outline of the cell bodies

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Address of the invited foreign guest read before the Section on Ophthalmology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

[1] Whitnall, S. E.: The Anatomy of the Human Orbit and Accessory Organs of Vision, London, H. Frowde, Hodder & Stoughton, 1921, p. 210.

[2] Maximow, A. E., and Bloom, W.: A Text-Book of Histology, ed. 2, Philadelphia, W. B. Saunders Company, 1934, p. 760.

in ordinary sections; but the nuclei are long and spindle shaped and can be easily seen. The smallest intralobular excreting ducts are lined by a layer of low columnar or cuboidal cells and have a few myoepithelial cells. The large intralobular ducts have two layers of epithelium. Beattie and McDonald[3] found that there were two separate secreting units in the lacrimal gland of cats: the alveoli and the secretory ducts. They expressed the belief that the alveoli were responsible for the secretion of large quantities of watery fluids, while the ducts secrete a fluid which contains a high percentage of solids. There is no evidence, however, that such exists in human beings.

NERVE SUPPLY

The nerve supply of the lacrimal gland is well known in that the fifth, seventh and sympathetic fibers reach the gland, but the manner in which they do this and the role which each plays are still unsettled. The fifth nerve supply is through the lacrimal nerve, the smallest branch of the ophthalmic or first division of the fifth cranial nerve. It enters the orbit through the lateral part of the superior orbital fissure, runs along the upper border of the lateral rectus muscle with the lacrimal artery and enters the gland and gives off twigs to the gland and to the conjunctiva. It receives a twig from the zygomaticotemporal branch of the zygomatic nerves, which is a branch of the maxillary or second division of the fifth cranial nerve. This twig is believed to contain secretomotor fibers from the sphenopalatine ganglion. This is disputed by some, especially Kalt,[4] as the zygomatic nerve leaves the maxillary nerve before the fibers from the sphenopalatine ganglion enter the maxillary nerve. For these fibers to enter the zygomatic nerve they would have to course backward in the maxillary nerve to run forward in the zygomatic nerve. The facial nerve supply is through the greater superficial petrosal nerve which arises from the geniculate ganglion of the facial nerve. Although it is made up chiefly of sensory fibers it probably contains a few parasympathetic fibers which go to the splenopalatine ganglion.[5] It leaves the geniculate ganglion and passes beneath the gasserian ganglion to reach the foramen lacerum, where it joins the deep petrosal nerve from the sympathetic plexus on the internal carotid artery and becomes the vidian nerve which ends in the sphenopalatine ganglion. From here the fibers from the facial proceed as previously described, by way of the zygomatic nerve and others by way of the orbital branches from the sphenopalatine ganglion. These latter are two or three delicate filaments which enter the orbit through the inferior orbital fissure and are distributed to the periostium and orbital muscle. Some fibers are said to convey secretomotor fibers to the lacrimal gland. This is the more direct pathway.

The sympathetic pathway seems to be along two courses: One is by way of the deep petrosal nerve from the internal carotid plexus which joins with the greater superficial petrosal nerve to join the sphenopalatine ganglion, and from there on the course is similar to that of the facial fibers. A second route is by way of plexuses along the internal carotid artery and its branches, that is, following the lacrimal artery to the gland.

If the course of the nerve fibers to the lacrimal gland, as mentioned previously, is not entirely agreed on, the role played by each in activating secretion is even more disputed. The general belief is that the sympathetic is responsible for the ordinary amount of fluid necessary for the physiologic requirements of the eye, that the facial supplies the excessive tearing and that the fifth nerve is an afferent pathway.

Babkin, however, said that all investigators agree that the secretory parasympathetic fibers for the lacrimal gland in human beings are derived from the nucleus salivatorious superior of the seventh nerve in the medulla and pass through the greater superficial petrosal nerve to join one of the trigeminal branches and reach the gland, presumably by way of the zygomatic and lacrimal nerves. It seems that the fifth nerve sends only sensory fibers to the eye and forms the afferent path of the lacrimal reflex. It is doubtful that secretory fibers originate in the nucleus of the fifth nerve.

The role of the sympathetic nerve in lacrimation is especially obscure. It is almost impossible to produce any secretion of tears by sympathetic stimulation. Certainly the sympathetic conveys vasodilator and vasoconstrictor fibers to the lacrimal gland, and it may convey motor fibers for the basket cells of the acini and tubules. This is only a supposition, as no detailed work on the secretory mechanism of the lacrimal gland in human beings has ever been carried out.

CONDITIONS ASSOCIATED WITH DIMINISHED TEAR SECRETION

Keratoconjunctivitis Sicca.—Probably the best known of the conditions associated with diminished tear secretion is keratoconjunctivitis sicca. This disease has been well described by Sjögren[6] in his extensive monogram, and a more recent contribution on the subject was given by Bruce, in 1941.[7] I do not intend to describe the condition in detail, as this is well done in the aforementioned articles, accompanied with an excellent bibliography. The commonest complaints are burning and itching of the eyes, with impaired vision at times. There is usually a dry feeling as well, and photophobia is often present. Usually there is stringy mucus present in the conjunctival sac which is difficult to remove, not unlike that seen at times in spring catarrh. This should lead to a suspicion of the diagnosis of keratoconjunctivitis sicca, and tear measurement should always be carried out. Dryness of the mouth is not always complained of, but on inquiry it is usually admitted. Similarly, swelling of the parotid gland and arthritis are often acknowledged only after inquiry. The flakes of mucoid material adhere to the cornea, and they are moved about only after a good deal of pressure through the lid. These may be mistaken for true filaments, which are usually found on the lower part of the cornea during some stage of the disease. Many of the cases reported have occurred in women about the menopause. I recently saw a patient, aged 37 years, who had had an artificial menopause produced twelve years previously; keratitis sicca developed two years after menopause, with no relief through general and local treatment until occlusion of the canaliculi, as first advised by Beetham,[8] was performed, after which practically all her symptoms disappeared immediately. In a case in which I closed the canaliculi on one side only, the patient insisted on having the other similarly treated as soon as possible. This is done by inserting an electrocoagulation needle into the canaliculus for 3 or 4 mm., and sufficient current is used to destroy the epithelium so as to lead to closure. This method of treatment is so satisfactory that it should be instituted as soon as the diagnosis is made and the symptoms are distressing. Pathologic study of the condition in its early stages, as described by Sjögren,[9] shows that some of the granular tubules are replaced by a granular mass of protoplasm with no cell boundaries and the *nuclei are found in irregular* groups. Later the cells lose their connection with one another and lie like masses of free round cells. This is followed by the migration of round cells, and there is gradual conversion of the whole gland into connective tissue. Giant cells have never been seen. Nothing is mentioned of the condition of Krause's glands. It is presumed that similar changes occur in them.

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[3] Beattie, J., and McDonald, P. R.: Cytological Changes in the Lachrymal Gland Following the Administration of Certain Drugs, Proc. Roy. Soc., London, s.B. **113**:217, 1933.

[4] Kalt, M. E.: Anatomie et physiologie de l'appareil lacrymal, in Enclyclopédie française d'ophtalmologie, Paris, E. Doin, 1903, vol. 1, p. 311.

[5] Gray, H.: Anatomy, Descriptive and Applied, edited by T. B. Johnston, ed. 26, New York, Longmans, Green & Co., 1935, p. 1044.

[6] Sjögren, H.: Zur Kenntnis der Keratoconjunctivitis sicca: Allgemaine [illegible] Aetiologie, Acta ophth. **13**:1, 1935; Zur Kenntn [illegible] sicca (Keratitis filiformis bei Hypofunctio [illegible] 1933, supp. 2, p. 1.

[7] Bruce, G. M.: Keratoconjunctivitis Sicca, Arch. Ophth. **26**:945 (Dec.) 1941.

[8] Beetham, W. P.: Filamentary Keratitis, Tr. Am. Ophth. Soc. **33**:413, 1935.

Neuroparalytic Keratitis.—Perhaps the second most common condition associated with diminished tear secretion is neuroparalytic keratitis, or, as Rowbotham [10] called it, "paralytic interstitial keratitis." This at times follows operation or alcohol injection for the relief of fifth nerve neuralgia. It has never been reported in cases where the sensation of the cornea is preserved; that is, unless the ophthalmic division of the fifth nerve is physiologically severed. I feel that we, as ophthalmologists, should impress this on the neurosurgeons and endeavor to have them spare the ophthalmic division of the fifth nerve, or the fibers leading to it, if at all possible in operations for the relief of trigeminal neuralgia. The incidence of neuroparalytic keratitis, after complete section of the posterior root, or destruction of the ganglion by alcohol, is difficult to determine, as it may occur many years after surgical intervention. Harris [11] expressed the belief that it probably occurred in about 20 per cent of the cases. Others say 10 per cent, but both these figures seem high. Severance of the greater superficial petrosal nerve diminishes tear secretion, and Verhoeff [12] expressed the belief that this is probably responsible for the occurrence of the keratitis; yet I have seen the keratitis appear where the greater superficial petrosal nerve could not have been injured and the seventh nerve was also completely intact. Also, I have not seen a corneal lesion occur in a patient in years of follow-up after all the nerve supply to the lacrimal gland had been severed except some of the sympathetic supply. To relieve the persistence of severe pain due to right-sided fifth nerve neuralgia, Dr. William Cone carried out the following procedures in a case: a partial section of the fifth cranial nerve by the subtemporal approach, resection of the greater superficial petrosal nerve by the same approach, complete section of the fifth nerve through the occipital approach, removal of the superior cervical ganglion and, finally, section of the glossal pharyngeal nerve and the second, third and fourth cervical nerves on the right side. As the stellate ganglion was not removed, sympathetic fibers probably still entered the gland. There was anesthesia of the cornea, but, in spite of all this, tears were still present and the cornea remained normal for nine years, until the patient's death a few months prior to the time of reporting. The patient was addicted to drugs and alcohol, so that adequate protection of his eye could not have been adhered to. In neuroparalytic keratitis, which I believe is due to drying from lack of tear secretion, there is a loss of epithelium, but I have never seen filaments present as one sees in keratitis sicca. The area heals immediately when the lids are sutured together, and it remains so as long as they are left closed. A patient with neuroparalytic keratitis,[13] after the closed lids were separated and the puncta occluded, remained well for twelve years. On account of this satisfactory result, which has held for such a long period, I feel that closure of the canaliculi may have as important a place in this condition as it has in the treatment of keratoconjunctivitis sicca.

Corneal Lesions.—Corneal lesions are reported in the literature following removal of the lacrimal gland, but in most of them there seemed to be other factors in which the accessory glands or their secretory fibers have been involved. I still believe that the lacrimal gland, orbital and palpebral lobes, may be removed with safety when Krause's glands are not affected. I have never seen a case of congenital absence of the lacrimal gland or absence of its secretion, as reported by Duke-Elder.[14]

Protein Content of Lacrimal Secretion.—Charlton [15] stated that the protein content of the lacrimal secretion has considerable practical application in the nourishment of the anterior layers of the cornea, and Gundersen [16] stated that complete peritomy does not cause any visible disturbance in the corneal epithelium, and he stated the belief, in view of this and other experimental evidence and in view of the fact that tears are rich in sugar and nitrogenous substance, that it is probable that the epithelium derives its nourishment chiefly from the lacrimal secretion. I have felt that the healing of corneal lesions in neuroparalytic keratitis by closure of the lids was at least partly due to the better nourishment received by the epithelium from the contact of the palpebral conjunctiva and that the healing was not simply due to protection alone.

Oversecretion of Tears.—Oversecretion of tears is a much commoner complaint. During winters in Montreal, one hears of this complaint daily. It is chiefly limited to the older age groups, and is not due to any fault of the drainage apparatus but to overproduction of tear secretion. I think that probing is bad practice in this type of case. If the tearing is troublesome enough, removal of the inferior lobe of the gland should be performed, and in my experience this gives satisfactory results.

Disease of the Lacrimal Sac.—One cannot consider the problem of excessive tearing without considering disease of the lacrimal sac. Tearing after proper excision of the lacrimal sac is not as common as is believed. Paparcone [17] found only 4 or 5 patients with troublesome epiphora in 302 cases after extirpation of the tear sac. I have often felt that in many cases, after a clean excision of the sac without injury to the canal walls, some tears must escape into the nose. If the epiphora is troublesome, excision of the inferior lobe usually gives satisfactory relief. In elderly persons, and in those distant from expert care, when dacryocystitis is present I feel that excision of the sac, on account of its ease, is the operation of choice, but in younger persons a conservative operation should be carried out. I have never performed a dacryostomy, as advised by Arruga,[18] although I have seen 1 patient for whom the operation was performed with success. Occasionally, in troublesome tearing, when all other means of treatment have failed, excision of the lacrimal gland is advisable. An instance of this is the case of J. S. L., aged 42 years, a clerk, with troublesome tearing of both eyes for years. He gave a history of having had some form of conservative operation performed on his right lacrimal sac with excision of the inferior lobe of the right gland, with no relief. He also had left-sided chronic suppurative dacryocystitis. I removed the left sac, and after this operation there was no epiphora in the left eye. One year later I removed the remains of the right inferior lobe of the lacrimal gland, but tears were still troublesome, and seven months later I removed the right orbital gland, with immediate relief, and recent correspondence reveals that he has remained free from tearing. The right lacrimal sac was not interfered with, as there was no regurgitation of pus and both canaliculi, which had been slit, were tied down in the scar.

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[9] Sjögren, H.: Keratoconjunctivitis Sicca, in Ridley and Sorsby,[21] p. 403.

[10] Rowbotham, G. F.: Observations on the Effects of Trigeminal Denervation, Brain **62:** 364, 1939.

[11] Harris, W.: The Facial Neuralgias, London, Oxford University Press, 1937, p. 62.

[12] Verhoeff, F. H.: The Cause of Keratitis After Gasserian Ganglion Operations, Am. J. Ophth. **8:** 273, 1925.

[13] MacMillan, J. A., and Cone, W. V.: Prevention and Treatment of Keratitis Neuroparalytica by Closure of the Lacrimal Canaliculi, Arch. Ophth. **18:** 352 (Sept.) 1937.

[14] Duke-Elder, W. S.: Keratitis Sicca, Brit. J. Ophth. **14:** 61, 1930.

[15] Charlton, C. F.: Protein in the Tears, and Innervation and Secretion of the Lacrimal Gland, Am. J. Ophth. **4:** 647, 1921.

[16] Gundersen, T.: Vascular Obliteration for Various Types of Keratitis, Tr. Sec. Ophth., A. M. A., 1938, p. 94.

[17] Paparcone, E.: Ueber die chirurgische Behandlung der Dakryocystitis (Statistik über 302 total Tränensackentfernungen), Zentralbl. f. d. ges Ophth. **15:** 767, 1925-1926.

Excision of the lacrimal gland is not difficult but does not seem to have met with much favor, possibly on account of the radical procedure reported by Holmes,[19] in which he removed the orbital gland at the time of the excision of the lacrimal sac.

Crocodile Tears Syndrome.—The crocodile tears syndrome is believed to be due to misdirection of fibers in regeneration of the seventh nerve after paralysis. Fibers intended for the parotid gland are diverted to the lacrimal gland, so that during mastication the salivary nucleus is also bombarding the lacrimal gland with the secretomotor stimuli.

Lysozyme.—In 1922, Fleming[20] described its presence in large quantities in the tears. Lysozyme is an enzyme with decided bacteriolytic properties, and, according to Ridley,[21] when it is present in full concentration it is capable of inhibiting the growth of all the common pyogenic cocci which may infect the eye. As lysozyme is impaired in its action by way of the common chemicals used as eye drops, Fleming[22] said that better results might be obtained if less attention were paid to the bactericidal action of chemical antiseptics and more care given to the bacteriostatic action, that is, the inhibition of growth of bacteria. I believe that this is a point which is too often forgotten.

TUMORS OF THE LACRIMAL GLAND

Tumors of the lacrimal gland are relatively rare, but not so uncommon as to be classed as curiosities. Lane[23] collected 229 cases up to 1922, and Ziporkes[24] said that about 275 cases were reported up to 1937. My colleagues and I have had 3 cases of tumor of tl lacrimal gland[25] at the Royal Victoria Hospital, Mo treal, the report of which follows.

CASE 1.—Mrs. E. M., aged 64 years, had experienced pa in the left eyeball, on and off, for thirty years following blow. The first sign of proptosis was in August 1930. Fo months later there was a mass in the upper-outer angle the orbit, which was removed. One year later there was rec rence; partial exenteration of the orbit, with removal of ove lying bone, was done. The patient died from intracran extension eight years after the first operation.

The histologic sections showed a central distinctly malignant area with closely packed cells arranged to form acini and cystic space, giving a cribiform appearance. At the periphery, however, there was a zone of pleomorphism having all the features of the so-called mixed tumors. It was obvious that an area of malignancy had developed in an originally benign growth.

CASE 2.—Mrs. M., aged 30 years, gave a history of pain around the right eye one and a half years before examination in May 1933, at the beginning of proptosis. The eye was removed in England, in December 1935, with most of the new growth. She was given 40,000 mg. hours of radium at Middlesex Hospital. Roentgen therapy was continued in Montreal.

In December 1939, papilledema (left eye), headaches and vomiting developed. An intracranial expanding lesion was present. The patient died December 23. There was no postmortem examination. The extension was apparently from the orbit.

The histologic sections showed cords and strands of small dark-staining cells. The abundant tissue between the epithelial clusters was collagenous and often hyaline, not pseudomyxomatous. In some areas large aggregations of the epithelial elements took on the appearance of developing embryonic glandular tissue with small acini in the masses. Invasion of surrounding fatty tissue had occurred. This growth showed less evidence of pleomorphism than the others and was definitely invasive. Its cylindromatous character was a distinctive feature. It was classified as an adenocarcinoma.

CASE 3.—Mr. E. C., aged 29 years, was first seen in June 1942 with a history of proptosis for three months and right-sided headache for five to six years. In July the mass was removed; it contained strumous material, seedlike in appearance. The patient made a good recovery. Seven months later there was recurrence in the same position. A lage part of an infiltrating mass was removed and exenteration was advised. The patient was seen by many consultants. Opinions varied from exenteration to roentgen and radium therapy. The patient refused exenteration. Extensive roentgen therapy was given. At the time of reporting the patient was still living, with no recurrence, but there was a mass below the tip of the mastoid. The patient refused biopsy.

Histologically the tumor was extremely pleomorphic with strands of epithelial cells, some showing squamous cell structure, a large amount of pseudomyxomatous tissue and areas of solid growth of closely packed branching cells which conformed to the basket cell derivatives described by Sheldon.[26] There were no areas simulating cartilage and no cylindromatous formation. This tumor was considered a pleomorphic adenoma.

COMMENT

From the classification of the original observers, reported by Warthin[27] and Lane, one might get the impression that the lacrimal gland is characterized by its ability to produce a large number of different types of growth. Actually, it is known that the opposite is the case and that aside from the lymphomatous infiltration in the Mikulicz syndrome and the occasional neoplastic curiosities all the tumors so differently designated are only variants of a single type ranging from benign to malignant pleomorphism. To this type the unsatisfactory term of "mixed tumors" is applied most frequently. No mention seems to have been made of the basket cells playing a part in the origin of these tumors, as occurs in the salivary glands and described by Sheldon. Case 3, herein reported, seems to be an example. If Sheldon's observations in tumors of the salivary glands are also true for tumors of the lacrimal gland, it might add to our knowledge of their development. In his conclusions, he stated that tumors of the salivary glands include cancerous and noncancerous neoplasms composed of one or two different types of neoplastic cells. Both types of cells are normally present in the salivary glands; one is represented by the secreting epithelium and the other by the basket cells. Some of the tumors arise from the epithelium, others from the epithelium and basket cells, which are true organized tumors, and a few arise from the basket cells alone. It seems to me that in future it would be helpful to try to classify tumors of the lacrimal glands along these lines.

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[18] Arruga, H.: Surgical Treatment of Lacrimation, Arch. Ophth. **19:** 9 (Jan.) 1938.

[19] Holmes, C. R.: Extirpation of Lacrymal Sac and Gland, Arch. Ophth. **28:** 1, 1899.

[20] Fleming, A.: On a Remarkable Bacteriolytic Element Found in Tissues and Secretions, Proc. Roy. Soc., London, s.B. **93:** 306, 1922.

[21] Ridley, F., and Sorsby, A.: Modern Trends in Ophthalmology, New York, Paul B. Hoeber, Inc., 1941, p. 382.

[22] Fleming, A., in Ridley and Sorsby,[21] p. 491.

[23] Lane, L. A.: A Study of Tumors of the Lacrimal Gland with Report of a Mixed Tumor, Am. J. Ophth. **5:** 425, 1922.

[24] Ziporkes, J.: A Case of Mixed Tumor of the Lacrimal Gland, with Retinal Folds and Choroidal Detachment, Which Disappeared After Removal of Growth, Arch. Ophth. **18:** 933 (Dec.) 1937.

[25] The pathologic slides were also examined by Dr. T. R. Waugh, professor of pathology, McGill University.

[26] Sheldon, W. H.: So-Called Mixed Tumors of the Salivary Glands, Arch. Path. **35:** 1 (Jan.) 1943.

[27] Warthin, A. S.: A Case of Endothelioma of the Lachrymal Gland (Myxo-Chondro-Endothelioma Cylindromatodes), with an Analysis of Previously Reported Cases of Lachrymal Gland Tumors, Arch. Ophth. **30:** 601, 1901.

In conclusion I should like to mention the views of Elton Mayo, who says that "knowledge of acquaintance" comes from direct experience of fact and situation, while "knowledge about" is the product of reflective and abstract thinking. I have tried in this presentation, as much as possible, to adhere to the expression of the former.

PRESENT STATUS OF THE PEPTIC ULCER PROBLEM

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Peptic ulcer is a classic example of a somatic disease which is greatly influenced by and possibly precipitated by psychic factors. All physicians have been impressed by the close relationship between nervousness, anxiety, worry or psychic trauma and the acute exacerbations of ulcer but we are apt to forget the admonition of Jordan[1] that there may be a somatopsychic as well as a psychosomatic interplay. The typical spring and fall exacerbations without obvious precipitating causes may result in worry, anxiety and nervous tension which in a sick person bring about family quarrels, business worries, fear of losing a job or other problems that are sure to aggravate any symptoms the unhappy victim may have.

The principal changes in the management of peptic ulcer in the last decade have not been primarily changes in diagnostic methods, but in the handling of the ulcer after the diagnosis is made. It is not the purpose of this paper to discuss the symptomatology or routine diagnostic methods that we all use, but rather to describe some of the problems in diagnosis and management.

To fail to find an ulcer when it is present deprives the patient of adequate treatment when he most needs it—in the early stages of the ulcer. Jordan[1] has properly said, "Clinical experience tends to show that peptic ulcer is too infrequently diagnosed rather than too frequently diagnosed." On the other hand, it is not proper to diagnose a peptic ulcer on the basis of history alone; the presence of the ulcer should be carefully verified by every means at our disposal. Incorrectly calling a functional digestive disturbance ulcer not only results in improper treatment, but it also wrongly labels the patient as having a disease that, later, may cause insurance companies or future employers to refuse to insure or to employ a person who is a good risk, to the serious detriment of the patient's economic status.

Not only should roentgenograms be employed in every case, but careful fluoroscopy is even more important. A small ulcer on the lesser curvature high in the media of the stomach would often be missed without careful fluoroscopic observation after a swallow ingestion of thick barium. Often by fluoroscopy antral spasm can be differentiated from a prepyloric malignant condition. A tiny, but persistent, deformity in the base of the duodenal cap can be verified by fluoroscopy when it can only be suspected from the roentgenograms. Palpation during fluoroscopy may be the only means of identifying a persistent fleck in the jejunum, the site of a jejunal ulcer. Such an ulcer may be tender, and the patient is often able to put his finger exactly over it at the time of the examination. The same finger point tenderness may be found present over an ulcer penetrating the posterior wall of the stomach or the duodenum, but this is not often the case.

An ulcer in the first portion of the duodenum beyond the duodenal cap can be recognized on the roentgenogram by a narrowing with a definite dilatation of the duodenum distal to this narrowing. At one time these areas were said to indicate duodenal spasm, but they represent actual ulcers. In fact, this narrowing may be all that can be found in the otherwise obscure bleeding ulcer. Roentgenograms of many of these patients following hemorrhage in the upper part of the gastrointestinal tract have been accompanied with a report of "normal stomach and duodenum," when the finding of the constriction might have given the clue to the actual location of the ulcer.

The laboratory data are helpful but never diagnostic. In particular too much reliance should not be placed on the presence or absence of gastric acid. While it is true that ulcer never occurs in the presence of true anacidity, it is also true that an occasional aspiration of gastric contents may fail to show acid even if an active ulcer is present. The old dictum that a malignant gastric condition produces achlorhydria is not always true. In 45 per cent of our cases of proved gastric carcinoma free acid was present in the stomach; hyperchlorhydria was present in 12 per cent.

Gastroscopy is now time tested and proved as a valuable adjunct to diagnosis, but its limitations are well known. By its use, one can often determine that an ulcerating lesion in the stomach is benign or malignant. However, the borderline cases may be just as difficult to determine from their gastroscopic appearance as from the roentgen appearance. In addition there are a number of blind spots where a fairly large lesion might be completely invisible. At the Lahey Clinic, my associates and I have found there has been a singular paucity of cases of gastritis. Some cases of gastritis, both atrophic and hypertrophic, are obvious, but my associates and I believe that in many of the borderline cases gastritis is not present, but simply day to day variations in a normal stomach. Gastroscopy will often show a small, incompletely healed gastric ulcer after the niche has completely disappeared on the roentgenograms.

Read before the Section on General Practice at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 25, 1948.

[1] Jordan, S. M.: Peptic Ulcer: A Diagnostic and Therapeutic Problem, Gastroenterology 9: 237-248 (Sept.) 1947.

MANAGEMENT OF PATIENTS WITH ULCER

Modifications of the old Sippy diet have proved most satisfactory, and we still prefer hourly feedings of milk and cream during a three week period of hospitalization. Neutralization of gastric acid is a prerequisite of good treatment. Diet alone will not adequately control the pain or heal the ulcer. Sippy powders are not used routinely, preference being given to aluminum hydroxide gel. We have had little success with the use of magnesium products. All of them, in doses adequate to control the acid, cause enough irritability and spasm of the colon to prevent their continued use.

Synthetic resins in finely powdered form theoretically offer the advantages of aluminum hydroxide without its disadvantage of aggravating constipation. Actually in about half of our cases in which it was the only neutralizing agent used the patients said that they felt no better or felt that their pain was increased.

Protein hydrolysates and amino acids have a place in the management of ulcer, but they do not contribute directly to the healing of the ulcer. The debilitated patient, the patient who has been on a deficient diet, the starved patient will all benefit from accessory feedings, including protein hydrolysates, just as they benefit from an extra allowance of vitamins. Many, and probably most, patients with ulcer, however, have been on adequate diets; they are not debilitated, and they have no protein deficiency. In this group accessory feedings of the portein hydrolysate type are costly, wasteful and unnecessary.

Enterogastrone is still in the experimental stage. Until a sufficient number of cases have been studied for a long enough time, it would be premature to try to judge or appraise its use in therapy. We have used enterogastrone in a small series, but are not yet ready to comment on our results. Bercovitz and his associates[2] recently reported on a series of intractable duodenal ulcers treated with an extract of pregnant mare's urine. It seems certain that some new and valuable form of hormonal treatment will emanate from the many investigations now under way at the instigation of the Committee on Peptic Ulcer fostered by the American Gastroenterological Association.

MANAGEMENT OF PATIENTS WITH GASTRIC ULCER

The medical management of patients with gastric ulcer has become a touchy problem. Some of our surgical colleagues have stated that all gastric ulcers should be treated surgically. They base their arguments on the following premises: (1) It is impossible to distinguish a benign from a malignant ulcer, clinically, roentgenographically or surgically; (2) the mortality of resection in skilled hands is less than 2 per cent; (3) recurrence of gastric or gastrojejunal ulcer after resection for a gastric ulcer is rare and practically does not occur, whereas after resection for duodenal ulcer both gastric and jejunal ulcer not infrequently recur.

The following comments oppose the foregoing arguments: 1. It is possible in most cases to differentiate clinically and roentgenographically between benign and malignant lesions. The percentage of malignant ulcers occurring on the lesser curvature of the mediums of the stomach in a young person (under 35) is extremely low. To sacrifice most of the stomach and permanently to change the digestive physiology in this large group to remove the rare malignant ulcer is an overuse of caution. The prepyloric ulcer in an older person may justifiably be regarded as a surgical problem from the start. In the younger group, however, frequent roentgen checkups, gastroscopy and careful checking of stools for occult blood will furnish satisfactory evidence that healing has taken place. If an ulcer fails to heal in three to four weeks, that should be considered sufficient evidence to justify operation. If the ulcer heals but recurs at any time in the future, operation should be performed immediately without further treatment. Every patient treated medically for ulcer should be followed carefully and checked by roentgenogram yearly or oftener for the rest of his life. 2. Even though the operative mortality rate in skilled hands is low, the morbidity rate after a subtotal gastric resection is still high: neither the mortality nor the morbidity rate is lower in less skilled hands, and all physicians see patients who never feel entirely well or normal after such operations. Jordan and Smith[3] have recently written that only in 3.2 per cent of their patients with ulcer selected for medical management did a malignant condition develop in a five year follow-up period.

MANAGEMENT OF PATIENTS WITH COMPLICATIONS OF ULCER

The most common complication of ulcer is obstruction. True obstruction is a surgical problem, but many ulcers produce a temporary blocking due to edema and spasm. The truly obstructing ulcer can be differentiated from the apparent one by a procedure[4] of draining the stomach through a nasal tube. Malted milk, amino acids and antacids are introduced hourly. The tube is clamped for half the time and allowed to drain into a bottle below the bed for the other half. This procedure will decompress a dilated stomach, will relieve pain promptly, and, if the cause of the obstruction is not due to scarring, the pylorus will relax in twenty-four to forty-eight hours, allowing food to pass through freely. Those patients do not require surgical management, and if they are properly treated the obstruction will not recur. If the obstruction persists more than seventy-two hours, operation is indicated. The ulcer may seem better temporarily, but obstruction returns as soon as the patient is up and about.

Hemorrhage, the next most common complication, is the easiest to diagnose and the most difficult to treat satisfactorily, either medically or surgically. The patient who has had two or more gross hemorrhages in our series has a small chance of dying but an unenviable chance of recurrent hemorrhage in spite of medical management (80 per cent) and a greater than suspected chance of recurrence after subtotal resection (29 per cent).[5]

Intractability is given as a reason for operation on ulcer, but the definition of an intractable ulcer varies from group to group and even from physician to physician. We have tried to make a distinction between the intractable ulcer and the intractable patient. It is often the latter, who refuses to stop smoking, who makes only desultory efforts to follow a diet, who cooperates poorly with any form of treatment, who helps to make up the large group of patients in whom treatment for ulcer has been a failure. This applies as well after operation as before.

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[2] Bercovitz, Z. T.; Page, R. C., and Heffner, R. R.: Oral Treatment of Chronic Duodenal Ulcer with an Extract of Pregnant Mares' Urine, read before the meeting of the American Gastroenterological Association, Atlantic City, N. J., April 1948; to be published.

[3] Jordan, S. M., and Smith, F. H.: A Study of Gastric Ulcer, read before the meeting of the American Gastroenterological Association, Atlantic City, N. J., April 1948; to be published.

[4] Wilkinson, S. A.: The Obstructed Peptic Ulcer, Am. J. Digest. Dis. 9: 321-327 (Oct.) 1942.

[5] Wilkinson, S. A., and Tracey, M. L.: The History of Hemorrhage in Peptic Ulcer, Gastroenterology 7: 450-455 (Oct.) 1946.

VAGOTOMY VERSUS SUBTOTAL RESECTION

For years we have realized the shortcomings of subtotal resection as a treatment for ulcer. It does not guarantee freedom from recurrence; it is a major surgical procedure associated with some mortality and a larger morbidity; it is not always possible to remove the ulcer if it is a duodenal one. The operation imposes a major physiologic readjustment, and if it is not well done various unpleasant consequences ensue. If the anastomotic stoma is too big, the dumping syndrome is disabling and impossible to treat. If the stoma is too small, the gastric stump, which has little peristaltic activity remaining, empties too slowly. The patient complains of fulness and discomfort long after a small meal. As a result of inadequate intake, he loses weight and quickly loses the psychologic "lift" which first developed with the knowledge that at last he was getting rid of his ulcer. Postoperatively small intestinal adhesions may occur and cause partial obstruction. If recurrent jejunal ulcer occurs it presents both the patient and the surgeon with the vexing question, "Now what?"

With the advent of vagotomy it was hoped that many of these difficult problems would be solved. Theoretically the patient was left with an intact stomach and a desirable anacidity. Actually, the operation does relieve the pain of ulcer dramatically in 88 per cent of cases. Unfortunately the hoped for anacidity is difficult to attain. Postoperatively the gastric motility is so seriously impaired that most large groups have abandoned transthoracic vagotomy in favor of subdiaphragmatic vagotomy combined with gastroenterostomy. It is the belief of some thoracic surgeons that the ramifications of the vagus nerve in the chest are so diverse that it is next to impossible to get all the fibers. Dissections of cadavers have shown that in many instances major bundles of the vagus nerve enter the stomach through the esophageal muscles. It is now known that peptic ulcer does recur or that it may fail to heal following vagotomy. There are reports that ulcers have progressed until perforation has occurred, being completely without pain up to the moment of perforation.

At the Lahey Clinic over 90 vagotomies have been performed, 8 of which were transthoracic and 82, the remainder, subdiaphragmatic. In the majority of the subdiaphragmatic group, we have combined vagus section with subtotal gastrectomy. It is too soon to evaluate final results, but a recent review[6] of 62 of our cases of subtotal vagotomies combined with subtotal gastrectomy showed that the vagotomized patients had more complaints, more severe complaints, longer duration of complaints and just as many recurrent ulcers as those in a similar group who had undergone subtotal gastrectomy. It is for these reasons that we are skeptical of the permanent effects of vagotomy and are placing most of our reliance on subtotal gastrectomy. The one condition for which vagotomy alone might be considered is the recurrent jejunal ulcer following an adequately high subtotal gastric resection.

POSTOPERATIVE MANAGEMENT OF THE PATIENT WITH ULCER

Operation, whether it be gastroenterostomy, subtotal resection or vagotomy, does not relieve the internist of his responsibility. If we have had any one fact firmly impressed on us, it is the necessity for meticulous and long-continued postoperative management of the patient with ulcer. The tendency of the patient who has followed a diet and has taken antacids more or less faithfully for a long time and who at last undergoes an operation is to say to himself, "No more diets or medicine for me. My ulcer is gone and I can eat and drink what I like." Nothing could be more incorrect. If he is to prevent recurrent ulcer, it is the duty of the physician to impress on his patient the need for long-continued care and observation. The patient should be instructed that he must not smoke; that he must not drink, at least until it can be proved that he has permanent achlorhydria, and that he should follow a careful dietary regimen. If his investment of time, of money, of pain and discomfort to reach his present position is explained to him, he will usually cooperate intelligently and well. It is largely in the group who fail to take these lessons seriously that the recurrences will be found.

SUMMARY AND CONCLUSION

Peptic ulcer presents a diagnostic problem chiefly with regard to the detection of small or obscure duodenal lesions. The therapy of ulcer offers a challenge to the patience, the acumen and the ability of the practitioner and the surgeon alike. The preoperative preparation and the postoperative dietary management of patients with ulcer subjected to operation are equally important. It is not yet proper to speak of any patient who has had ulcer as cured.

ABSTRACT OF DISCUSSION

Dr. Wingate M. Johnson, Winston-Salem, N. C.: Speaking of the diagnosis of ulcer, I have been impressed with the fact that the average patient with ulcer has few other digestive complaints. He is not likely to say that he hurts all over or is flatulent after meals. It is generally just that clearcut picture of pain before meals, relieved by eating, with recurrences. The patients often say that alkalies will give relief. One other point which I have found mentioned by Bockus, and which my own experience confirms, is that a patient with duodenal ulcer, unless he has had a recent hemorrhage, is likely to have a blood cell count which is a little higher than average. Hemoglobin will go up to 16 or 17 Gm., and red cell counts are of 5,000,000 to 5,500,000; on the other hand, the patients with gastric ulcer are likely to have a rather low blood cell count. So far as treatment goes, I was pleased to find that Dr. Wilkinson is a little conservative. I have found little use so far for protein hydrolysates. I think that the average patient does rather well on the typical ulcer regimen. As a rule I do not put my patients in the hospital, but in the beginning use a bland diet, with alkalies to control the acidity. I agree with what Dr. Wilkinson said, that the intractable ulcer usually occurs in the intractable patient. I have had patients who got no relief from pain until they stopped smoking. Many of my patients are allowed to continue to smoke in moderation, but there are a few who have pain and do not get relief from it until they stop smoking. I was interested in what was said about vagotomy. Being a medical man, I am not as surgically minded as some of my colleagues.

Dr. S. Allen Wilkinson, Boston: Dr. Johnson is more lenient than I would be about smoking. I am firmly convinced that the proper treatment of ulcer includes complete stopping of smoking and that the difference, in most cases, between the patient who is well controlled medically and the patient who is partly controlled medically is whether he smokes or does not smoke.

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[6] Wilkinson, S. A., and Sullivan, J. C.: Follow-Up of Vagotomy Plus Gastric Resection, read before the meeting of the American Gastro-enterological Association, Atlantic City, N. J., April 1948; to be published.

STREPTOMYCIN AS ADJUNCT IN TREATMENT OF ACUTE PULMONARY TUBERCULOSIS

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With the introduction of streptomycin in the treatment of clinical tuberculosis in 1945 by Hinshaw and Feldman[1] there was hope, on the basis of experiments with animals, that this antibiotic would cause definite arrest or cure of pulmonary tuberculosis. It was not long before it became evident that in the type of tuberculosis most commonly seen in sanatoriums and hospitals, advanced tuberculosis with cavitation, treatment with streptomycin seemed to have at best only a temporary effect. It was noted that exudative tuberculosis would resolve and that early infiltrate might disappear, but that in general cavities remained and that the sputum cultures remained positive.[2] Fibrous elements in the lung, whether associated with cavities or not, were untouched by this drug.

The pathologic and physiologic aspects of the tuberculous lesion explain this type of reaction. Streptomycin reaches the diseased organs through the blood stream, and any lesion well supplied with blood has a chance to receive an adequate amount of streptomycin to produce the bacteriostatic effect. Such a pathologic condition is the acute inflammatory exudative type of disease.

That exudative areas are well supplied with blood is indicated clinically by symptoms caused by absorption of the toxic element from these areas into the blood stream, but well established cavities, as has been shown by Lipstein,[3] have little blood supply. The circulation around the cavity is barely enough to maintain viability of the tissue, and since well established cavities have a definite wall, there is little exchange between the circulating blood and the interior of the cavity. Clinically, this is evidenced by the absence of fever or toxic symptoms in the presence of a cavity unless some exudative elements exist elsewhere in the lung or the body. Since this is so, it would be expected that streptomycin or any other blood-borne medication would not have much effect on the tubercle bacilli residing within the cavity in the lung, although it might have a definite action on exudative areas in the lung of the same patient.

Another characteristic of streptomycin has also interfered with its general efficacy in pulmonary tuberculosis. This is the loss of effectiveness after a period of two to three months caused by resistance developed in the bacteria or the development of resistant strains.[4] For this reason it is generally considered that the peak of effectiveness is reached in sixty days and that little, if any, effect remains after one hundred and twenty days of treatment. However, it has been known for many years that tuberculosis does not heal in such a short period and that treatment must be continued over a period of many months or years to produce an adequate result. Consequently, any medicament the effectiveness of which is limited to a time so much shorter than the time required for treatment is not likely to be successful when used by itself.

All of these factors when added together seem to limit the use of streptomycin to early exudative tuberculosis without much cavitation. This would eliminate the most important group of patients requiring treatment—those with chronic pulmonary tuberculosis with well established cavities and acute tuberculosis with rapid caseation, cavity formation and pneumonic spread. The first group is customarily treated with bed rest, collapse therapy and operation. This treatment, which offers a high percentage of good results is, nonetheless, frequently interfered with by progressive disease and complications which nullify the effect of treatment. Acute tuberculosis cannot be directly attacked by operation or collapse therapy, but must be allowed to "cool off" with bed rest.[5] In a respectable percentage of cases this "cooling off" process never occurs, or only after the lung has been so seriously damaged that treatment is not possible.

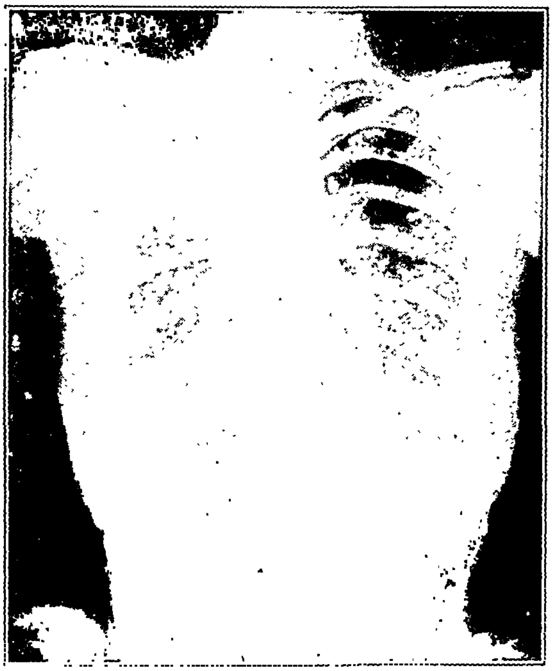

Fig. 1 (case 1).—Roentgenogram taken on admission, showing extensive caseous pneumonia on the upper lobe of the right lung and many bronchopneumonic areas in the lower lobes. On the left side a cavity may be seen underlying the third rib anteriorly, with extensive bronchopneumonic changes below.

It has been adequately demonstrated by Hinshaw and Feldman[6] that streptomycin will cause resolution of exudative elements and diminish toxicity and that during the first sixty days, at least, of treatment will prevent the extension of the disease. These characteristics of streptomycin cause just the change in an active tuberculous disease that is required to insure safe and successful collapse therapy.

It was for this reason that streptomycin was used in these two types of disease—not solely but as an adjunct to make possible or to render safe our estab-

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From the Chest Service of Michael Reese Hospital and Winfield Hospital, Chicago.

[1] Hinshaw, H. C., and Feldman, W. H.: Streptomycin in Treatment of Clinical Tuberculosis: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 313, 1945.

[2] Hinshaw, H. C.; Pyle, M. M., and Feldman, W. H.: Streptomycin in Tuberculosis, Am. J. Med. **2**: 429, 1947.

[3] Lipstein, S.: The Use of Postmortem Arteriography to Investigate the Source of Fatal Hemoptyses and the Caliber of the Pulmonary Blood Vessels in Pulmonary Tuberculosis, Quart. Bull. Sea View Hosp. **2**: 416, 1937.

[4] Youmans, G. P.; Williston, E. H.; Feldman, W. H., and Hinshaw, H. C.: Increase in Resistance of Tubercle Bacilli to Streptomycin: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **21**: 126, 1946.

[5] Hedbloom, C. A., in Goldberg, B.: Clinical Tuberculosis, Philadelphia, F. A. Davis Company, 1942, vol. 1, p. C-8.

[6] Hinshaw, H. C., and Feldman, W. H.: Streptomycin: A Summary of Clinical and Experimental Observations, J. Pediat. **28**: 269, 1946.

lished methods of treatment. It was felt that a plan of treatment should be made in each case and streptomycin fitted into that plan at the place where it would be most effective, with the time limitation of its effectiveness borne in mind. Such a program was used in the treatment of 26 patients with far advanced bilateral tuberculosis, whose disease was too acute or too extensive for routine collapse or surgical measures. The following cases indicate how this program worked out.

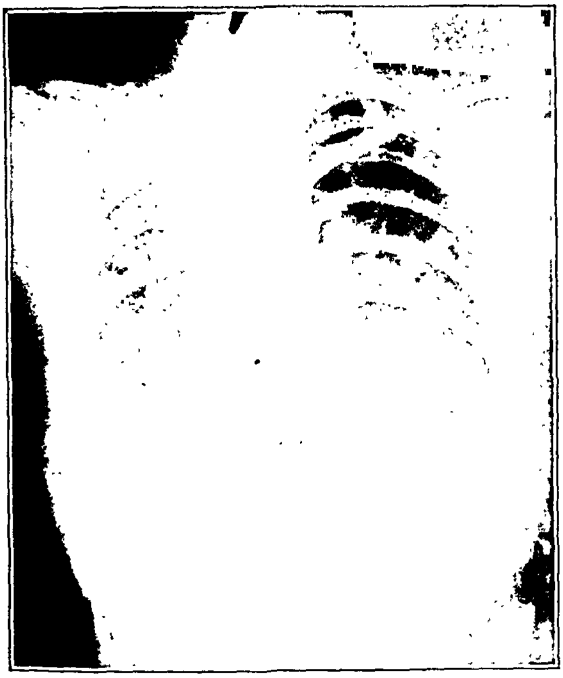

Fig. 2 (case 1).—Roentgenogram showing further destruction in the upper lobe of the right lung and extension of the disease. A pneumothorax was done on the left side.

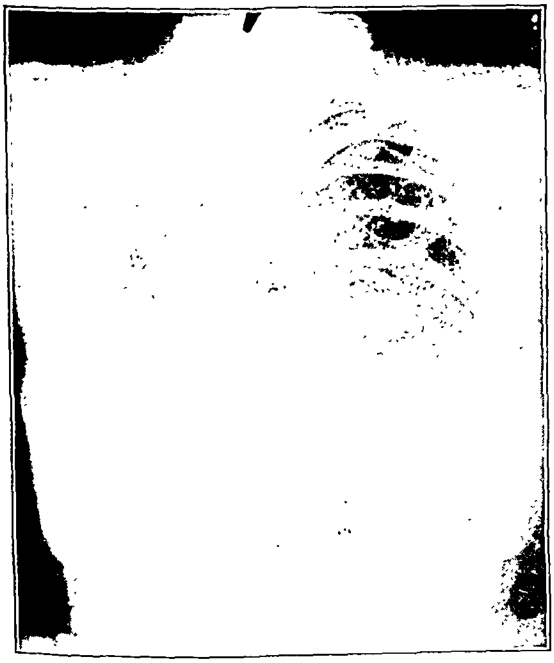

Fig. 3 (case 1).—Roentgenogram taken shortly after administration of streptomycin, showing little improvement, with the cavity still present on the left side and the appearance of tuberculous effusion.

REPORT OF CASES

Case 1.—M. K., a 21 year old white woman was admitted to Winfield Hospital on Sept. 24, 1946, with a three month history of tuberculosis. On admission the patient was acutely ill and had a spiking temperature with daily variation between 100 and 103 F., and a pulse rate of 100 to 120. The roentgenogram (fig. 1) showed extensive far-advanced bilateral disease, with almost complete involvement of the right lung, multiple cavitation in the upper part of the right lung and tuberculous pneumonia below. On the left, the apex was involved with cavitation in the middle part of the lung.

Pneumothorax was attempted, without success, and bed rest was continued, with the patient maintaining a steady downhill course. At this time her condition was toxic, and there was evidence of tuberculous enteritis, tuberculous bronchitis and laryngitis. On October 25, a diagnostic pneumothorax was done on the left side.

Her condition became so poor that it was highly questionable whether any treatment would be able to stop the course of this disease. Nevertheless, it was our feeling that, if the toxicity of the disease were decreased and its progression stopped, there might be some chance of applying surgical collapse to the right lung. The major lesion was on the right side, occupying almost the entire area of the lung. There was a lesion occupying the apex and the middle part of the left lung, and a diagnostic pneumothorax was done to determine whether cavitation was present and whether pneumothorax could offer some control of this lesion. Collapse was successful and showed a small cavity in the middle part of the lung.

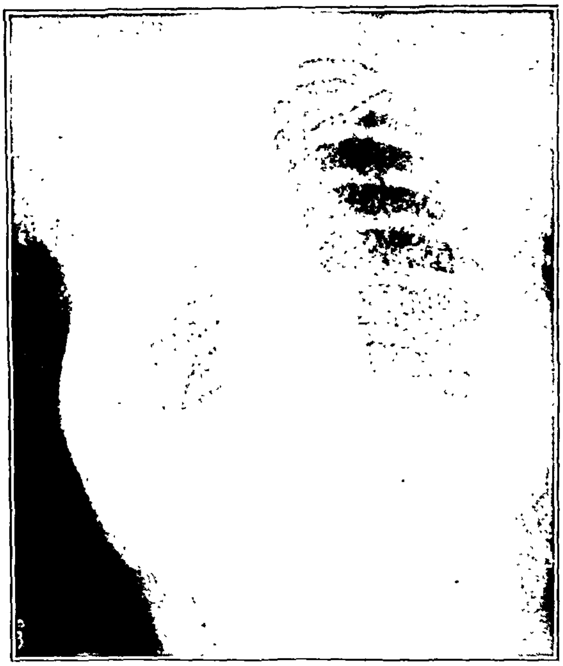

Fig. 4 (case 1).—Roentgenogram taken eight weeks after thoracoplasty and after pneumothorax of the left lung had been abandoned, showing the lung to be clear. There was no further extension of the disease on the right, and the general condition of the patient was good.

This collapse was maintained, and treatment with streptomycin was started on November 6, 2 Gm. a day. At this time the temperature reached a peak of 102 F. every day; the pulse rate varied between 120 and 140, and the patient was extremely sick and her condition toxic (fig. 2). Little improvement was noted after four weeks of treatment, although the roentgenogram did seem to show some clearing of the acute pneumonic areas in the right lung. By December 20, five weeks after the institution of streptomycin therapy, the temperature had dropped as low as 101 F. daily, the pulse rate varied from 105 to 120 and the patient showed sufficient general improvement to justify surgical treatment (fig. 3).

Thoracoplasty was done in three stages, the last stage being done on Jan. 27, 1947. With each stage of thoracoplasty there was decided improvement in the condition of the patient, and at no time was there any evidence of exacerbation of the disease or extension of this process. Pneumothorax was discontinued on January 15, after the second stage, because of the extreme dyspnea of the patient. It was hoped that, since the cavity had already closed with streptomycin therapy, it might remain obliterated. With completion of surgical treatment, the reaction of the sputum became negative, and it remained so. Eight weeks after the first stage of operation the patient was allowed out of bed, and a program of gradual physical rehabilitation was instituted (fig. 4). The patient responded well to this treatment and was discharged six months later with a diagnosis of arrested disease. She has remained well since and on a program of normal activity.

Comment.—This represents a type of case in which the disease is not amenable to treatment in ordinary circumstances. This was active progressive caseous pneumonia in a young girl, and as indicated, there was no noticeable improvement with a reasonable period of complete bed rest. However, the loss of toxicity and resolution of exudative areas, which accompanied the administration of streptomycin, and the relative safety from postoperative extension of the disease made it possible for us to perform an operation on this patient, which controlled the active pathologic condition. The plan in this case was to administer streptomycin until the toxicity was sufficiently diminished and the condition of the patient sufficiently improved to make surgical treatment a justifiable hazard and to continue treatment with streptomycin in the postoperative period for fully four months.

The result in this patient justified our expectations. First, there was a progressive decrease in the toxicity of the disease, with a lowering of temperature and improvement in the general condition of the patient Secondly, there was extensive operation on an actively tuberculous chest, without any spread or extension of the disease and without any complication referable to the tuberculosis. The decided reversal in the course of the disease from a steadily accelerating downhill course to an increasingly improved status was dramatic in this case.

Case 2.—M. B., a 24 year old white woman, was admitted on Oct. 31, 1946, with a seven month history of cough and pain in the left side of the chest. The reaction of the sputum was highly positive, and a large cavity was visualized in the upper lobe of the left lung, with a shadow off the left cardiac border which could be demonstrated to be encapsulated, interlobar effusion.

Pneumothorax was induced on the left side November 11 as the procedure of choice. However, the collapse was contraselective, the diseased area of the lung being completely adherent, and the cavity remained open. On December 2, the patient complained of sticking pain in the right side of the chest posteriorly, and roentgenographic examination at that time revealed a fresh pneumonic area in the base of the upper lobe of the right lung. On serial examinations this area in the right lung seemed to be increasing in size, showing suspicious signs of excavation, and there appeared to be extension into the lower lobe of the left lung. Because of the completely ineffective pneumothorax on the left, surgical treatment was considered indicated. However, the acute nature of the disease and the progressive lesion in the right lung gave evidence that extension could be expected during the surgical period with a probable unfortunate result.

Treatment with streptomycin, 2 Gm. daily, was started on December 20, at which time the patient had a temperature of 101 F. daily, and a two stage thoracoplasty was performed in January 1947, at which time the temperature was normal and resolution had occurred on the right side. The streptomycin therapy was continued through the postoperative period until February 13.

After operation the patient's cough and need for expectoration disappeared completely, and the reactions of the gastric washings had remained negative from February 24 to the date of writing.

Serial roentgenograms showed progressive resolution on the right side, and at the time of the last examination there were only a few fibrous strands in the area of the previously acute caseous tuberculosis. Her sedimentation rate was 6 cc. (contrasted with 22 cc. preoperatively); her temperature and pulse rate were normal, and she was discharged from the hospital, with full physical activity permitted, on June 20.

Comment.—In this patient, one method of treatment was unsuccessful and acute caseous pneumonia developed while bed rest was still part of the regimen. The condition in this patient was not amenable to ordinary treatment, and since the disease extended with bed rest, there was no hope that further bed rest would cause resolution. The plan here was to use streptomycin until there was sufficient resolution, particularly in the contralateral lung, to justify the risk of operation. Thoracoplasty was the method of controlling the disease. Streptomycin therapy was continued postoperatively for a full four month course.

It was noticeable in this case that the toxic symptoms subsided rapidly and that the downhill course of the patient was sharply arrested. The steady improvement of the acute lesion in the contralateral lung right through the surgical episodes is contrary to the customary experience in such cases without streptomycin therapy.

Case 3.—The onset of illness occurred early in February 1946, and the patient (W. G.) was admitted to hospital on February 26. There he remained, with complete bed rest, until he was admitted to Winfield Hospital on July 24. On admission he had a high spiking temperature, ranging from 99 to 103.8 F., and his general condition was poor. The patient was extremely weak and thin. A roentgenogram showed extensive caseous tuberculosis, involving almost all of the left lung, with extensive cavitation and multiple areas of tuberculous exudation in the right lung. Considering the history of six months of absolute bed rest and the poor condition of the patient, further rest was not considered advisable. Because the disease was spreading consistently, artificial pneumothorax was started August 5, on the left side, although it was realized that chances of complications were great. A roentgenogram taken after induction of pneumothorax showed almost complete shelling out of the left lung, with resulting extensive excavation. There was some decrease in temperature, so that it remained consistently below 101 F. Adhesions were present opposite the large cavity, with the cavity actually entering the adhesions. Pneumonolysis was thus considered out of the question, and a left phrenic crush was done. It was felt that the only type of treatment to offer a chance of cure was a pneumonectomy, but the condition of the patient was much too poor to consider any major surgical procedure.

On Jan. 8, 1947, the temperature became elevated, spiking up to 103 F. daily, and the patient began to expectorate larger amounts; a large amount of fluid was present in the chest. Expectoration of dye injected into the pleural space showed the presence of a bronchopleural fistula. There was extensive tuberculous pneumonia in the lower third of the right side of the chest. The condition of the patient deteriorated to the point where it was felt that he could not survive much longer. Streptomycin therapy was started January 13, because of the bronchopleural fistula and contralateral tuberculous pneumonia. It was felt that if the pneumonia in the right lung would improve somewhat, it might be possible to operate on the left. There was decided improvement and resolution of the pneumonia on the left side, and a thoracotomy was done with insertion of a tube in February. Following this, the patient improved, and there was a decided decrease in toxicity. The temperature remained irregular; fever was low grade, never exceeding 101 F.

On April 13, a first stage thoracoplasty was done; the second stage was done on April 23 and the third on May 8. The patient had an uneventful recovery from each stage of operation, although the last was extensive, with removal of part of the parietal pleura. He returned to Winfield Hospital May 24, and his temperature remained consistently below 99 F., his general condition being much improved. He continued to gain weight and strength, was allowed out of bed eight weeks after the first stage of operation and continued to improve. The right lung, in which acute tuberculous pneumonia had occurred, showed complete resolution, with only a few fibrous strands remaining at the site of the pathologic condition.

This patient's condition continued good. He gained 34 pounds (15 Kg.), the sputum cultures remained negative for tubercle bacilli and under a program of rehabilitation he returned to a normal status. After one year of observation and rehabilitation, he was discharged to continue his training as watchmaker and had remained well as of the time of writing.

Comment.—The disease in this case got completely out of hand. There was no control of the extensive lesion in the left lung. There was acute tuberculous empyema with bronchopleural fistula and subsequent extensive tuberculous pneumonia on the other side. The reduction of toxicity by the use of streptomycin plus the resolution of the pneumonic disease on the right side made it possible to do the extensive operation on the left. The plan here was to use streptomycin until the toxicity was sufficiently reduced to risk surgical treatment in small stages with the use of streptomycin, with the hope thereby of avoiding further extension to the right side from the bronchopleural fistula and the cavity until such time as these two areas were brought under control by the surgical procedure. Streptomycin therapy was continued for five months.

In this case the activity was such that there was no reason to believe that streptomycin would effect control of the disease. In fact, we do not believe that streptomycin controlled the tuberculosis in this case. Actually, what was accomplished was the diminution of toxicity, so that the patient could be built up to withstand extensive surgical treatment. During the same period decided resolution of the extensive tuberculous pneumonia occurred, and there was no further extension, although the bronchopleural fistula remained open.

These three factors created a clinical situation comparable to that of a patient with a disease of much lower toxicity that had not spread and without bronchopleural fistula. Such a condition is amenable to surgical treatment, which was possible in this case. The patient withstood the operation well and continued his improvement postoperatively, even after streptomycin therapy was stopped.

CASE 4.—A. D., a white woman aged 30, was admitted to Winfield Hospital Sept. 30, 1946. The onset of illness was five months before admission, and the patient had a regimen of complete bed rest for three months before admission to the hospital. Examination showed an acutely sick woman, with extensive bilateral far advanced tuberculosis and a giant cavity in and multiple cavitation of the upper lobe of the left lung and multiple cavitation of the upper lobe of the right lung, with areas of tuberculous pneumonia below. She showed a spiking temperature, varying daily from 99 to 102 F. and a pulse rate varying from 100 to 120. There were associated tuberculous enteritis, laryngitis and bronchitis.

Because of the progressive deterioration in the patient's condition, artificial pneumothorax was instituted on the left side on October 7, with the hope of controlling some of the disease. The cavity did not close, and a broad adhesion was seen extending to the thoracic wall at the site of the cavity in the lower lobe. The acuteness of the lesion and the fact that the cavity was so close to the adhesion made pneumonolysis an extremely dangerous procedure, and the risk was considered too great to justify the operation.

On Jan. 1, 1947, streptomycin therapy was started, with the feeling that if the toxicity of the disease decreased enough it might be worth the risk of cutting this large adhesion. If this procedure resulted in closure of the cavity of the lower lobe, *it might be possible to induce some type of collapse on the right* side. There was some improvement about two weeks following the institution of streptomycin therapy. One month after streptomycin therapy had been started the temperature remained below 100 F. Pneumonolysis was done, without any complication, on April 1. However, the cavity did not close. On April 10, there was some increase in temperature, and a week later the patient began to show daily increase, the temperature reaching as high as 104 F. This was not thought to be due to the pneumonolysis, since there was no fluid or other evidence of pleural inflammation, and a roentgenogram showed some new pathologic changes on the right, the side opposite to that operated on.

Streptomycin therapy was continued for two months longer, totaling five months of treatment. During the latter two months, however, the temperature continued elevated. Laryngeal symptoms and evidence of lesion reappeared, and the condition of the patient deteriorated. Also, during this period there was increased activity of the lesion on the right side, with many new areas of tuberculous pneumonia and additional cavities in the upper lobe.

Comment.—This was a case that did not appear to differ from some of our cases in which treatment had been successful. There was, however, one major difference. At no time did the clinical status change sufficiently to justify enough collapse or enough surgical treatment to control the tuberculosis. The changes shown by this patient, in regard to decrease in toxicity, improvement in general condition and resolution of exudative elements, were equal to those in our cases in which operation was employed. However, the location of the pathologic condition, that is to say, the fact that there was almost complete destruction of the left lung and extensive cavitation in the upper lobe of the right lung, made surgical treatment impossible, because of the lack of respiratory reserve.

Consequently, we observed that after one hundred days our patient began to show increased symptoms, rise in temperature and recurrence of tuberculous bronchitis and laryngitis, which had previously been much improved. Following this, there was extension of the tuberculous disease on the right side and a continued downhill course. We feel that such observations indicate that the control offered by streptomycin therapy is limited as to degree and as to time and that whatever definite method of controlling tuberculosis is to be used, it must be used within the limited period. Furthermore, whatever surgical treatment is indicated, it can be done only when the control offered by streptomycin therapy brings the patient within that limitation.

DOSAGE

The dose used in this series of cases varied from 2 Gm. in the beginning to a present accepted dose of 0.5 to 1 Gm. daily. At the beginning of this work streptomycin was administered in eight divided doses in twenty-four hours. The process changed as information on the drug increased, and we are now administering the aforementioned dose in a single daily injection. We have found that in most cases 0.5 Gm. daily is an adequate amount. This is similar to the experience of other workers in the field.[7]

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[7] Pfuetze, K. H., and William, A. M.: Present Status of Streptomycin in Tuberculosis, Dis. of Chest **14**: 446, 1948; Report of Committee on Chemotherapy and Antibiotics, American College of Chest Physicians, ibid. **14**: 766, 1948.

COMPLICATIONS

No serious complications were noted in the entire series. It was noticed, furthermore, that the diminution of the dosage to 1 Gm. of streptomycin a day was associated with a decided decrease in the number of complicating symptoms. Dizziness was the commonest complication occurring in the series, associated with permanent vestibular changes in only 1 patient. Numbness around the mouth, nausea and itching of the skin also occurred. Since for all of these patients the expected benefit from streptomycin therapy outweighed any except the most dangerous of complications, we were not deterred from its use by the untoward symptoms that occurred. Even if a larger percentage had shown permanent loss of equilibrium, we do not believe that this would contraindicate the use of streptomycin in a patient whose prognosis is questionable without it. There was no loss of vision and no deafness or other permanent toxic manifestations.

RESULTS

There were 26 patients in this group. One of the criteria used in the selection of cases was that the opinion of the entire staff must be that collapse therapy or surgical measures were imperative to effect a successful result and that bed rest alone would not do this. Furthermore, there was general agreement in each of these cases between the medical and surgical departments that surgical collapse was extremely hazardous or impossible at the time streptomycin therapy was started.

Of the 26 patients, there was successful collapse or operation in 24. In 1 of the 24, for whom a pneumonectomy had been done, there developed a bronchial lesion and exudative disease in the remaining lung within six months following operation. One patient did not improve sufficiently to permit any surgical procedure, and after one hundred days the original symptoms returned, with a downhill course. One patient recovered sufficiently to justify surgical collapse, but died in the postoperative period from atypical pneumonia, which was demonstrated by autopsy.

When we consider these results with the complications that occurred, we feel that in no case were the complications sufficiently severe to vitiate the beneficial effects of streptomycin therapy. Another interesting study is of the result of treatment on the pathologic changes in the lung opposite to that operated on or collapsed. In every case there was decided improvement. In 7 of the cases there was definite roentgenographic evidence of real fibrosis, representing an advanced healing stage of the tuberculous disease in that lung. Demonstrable cavities closed in 2 cases, and there was resolution of the exudative tuberculosis in every case in which such disease was present. It is noteworthy that in the 2 cases in which the contralateral lung showed extensive cavitation the cavitation remained unchanged during treatment with streptomycin. In 1 such case the disease extended as previously noted, and in the other it was possible to use bilateral pneumothorax to effect bilateral control. Treatment was given as follows:

Thoracoplasty	11 cases
Pneumothorax	9 cases
Pneumonolysis	3 cases
Pneumonectomy	3 cases

COMMENT

In this series of cases streptomycin was used as an instrument, or as an adjunct, and not for complete cure. Used thus it has an effectiveness and value unequalled by any other type of medicament. However, it is worth emphasizing again that in patients with advanced caseous tuberculosis, who make up such a large proportion of the patients treated, streptomycin therapy alone does not affect the total result, nor is it possible to apply collapse and surgical procedures in all of these patients without such aid. The combination of streptomycin with collapse therapy or other operation was the important factor.

In this connection, it is noted that the time schedule seems to play a greater part in the treatment in this type of case. One can never be sure, when treatment is started in extensive tuberculosis, just how soon the disease will be definitely controlled. Consequently, the margin of safety, representing the time when streptomycin therapy will still be effective, should be rather large, so that, if operations are delayed, if more stages are required than were anticipated or if the cavity does not collapse within the anticipated time, the effectiveness of streptomycin therapy will remain until control is assured. For this reason treatment with streptomycin should not be started in this type of case until a complete plan of treatment has been worked out. If streptomycin is used too early, there is the ever present danger that at the time when its effectiveness is most necessary that effectiveness will be greatly diminished.

In general, a period of one to two weeks of streptomycin therapy should be sufficient before operation, except for the patients who are so weak and toxic that, in addition to a degree of control, it is necessary to rebuild the patient before surgical intervention is attempted. Such a situation should be avoided, if at all possible, since the period of rebuilding may be longer than the effective period of streptomycin therapy.

We feel, furthermore, that there is a great danger inherent in the indiscriminate use of streptomycin for pulmonary tuberculosis. A trial period, to see whether cavities will close or lesions come under control, is tempting to the clinician and certainly desirable from the standpoint of the patient. However, when one considers that such a trial period must cover a minimum of sixty days, one realizes that if it should fail the opportunity to use the protective and deterrent action of streptomycin during the period of operation and collapse, when extension of the disease is likeliest to occur, would be lost. Furthermore, if there should be temporary improvement, followed months later by reactivation of the tuberculosis, there is always the danger that the resistance to streptomycin will remain. There is as yet insufficient evidence to make any statement regarding the return of sensitivity or the duration of resistance.

Consequently, it would seem that streptomycin should be used only when there are definite indications, for a definite purpose and as a part of a completely formulated plan. It should never be used in a therapeutic test or during a period of observation of a patient for whom other treatment may be required.

SUMMARY AND CONCLUSIONS

Streptomycin is not effective in the treatment of chronic pulmonary tuberculosis with well established cavities. However, for this condition, as well as for acute tuberculosis with rapid caseation, cavitation and pneumonic spread, streptomycin was used as an adjunct to the regular and accepted methods of collapse therapy and excision. We have observed it to be the most valuable single medicament known to us.

To date, the disease in 19 patients, all of whom presented lesions which were impossible to treat or could be treated only with great risk, has been controlled successfully by this means. Apparently streptomycin therapy caused a decided diminution of toxic symptoms, inhibited further spread of the disease and aided in the resolution of recent infiltrations. This had the effect, in general, of altering a lesion so that it could be successfully treated by standard methods.

We feel that in pulmonary tuberculosis, with the exception of early simple exudative disease, streptomycin therapy should not be instituted until a complete plan for the treatment of the patient has been formulated. There is great danger in using streptomycin too early, in that its effectiveness may be lost by the time collapse therapy or other surgical procedure is needed, and the assistance thus rendered would be wasted.

It has been noted that in these two types of disease, streptomycin therapy, although not successful in producing a cure, had certain definite effects. There was decrease in temperature and in other toxic symptoms, and no further spread of the disease occurred while recent infiltrations became resolved. Considered in the light of collapse therapy, this means that the factors which prevent treatment or interfere with successful completion are eliminated by the use of streptomycin.

Special Article

REFUGEE PHYSICIANS IN THE U. S. ZONE OF GERMANY AND THE MUNICH MEDICAL TEACHING MISSION OF 1948

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PART I

Throughout Germany today, in former SS *Kasernen*, temporary wooden barracks, shell-pocked apartment houses, small housing units, former slave labor camps and exschoolhouses and monasteries, live the United Nations displaced persons.

There are 280,000 of them receiving care and maintenance from the International Refugee Organization in the United States Zone of Germany, and another 160,000 existing precariously on the German economy but potentially eligible for legal, repatriation or resettlement assistance from the International Refugee Organization.

The displaced persons or refugees represent the remainder of the forced laborers and concentration camp victims of the Nazis, as well as those who fled from their homelands in fear of political or religious persecution. They include also the children kidnapped under a Germanization program, thousands of whom have since been traced to the homes or institutions to which they had been given as booty.

When the International Refugee Organization began operation in July 1947, it assumed responsibility for the care in assembly centers of refugees and displaced persons.

During the last twelve months, 16,000 refugees have left the camps to return home and 72,275 have departed for resettlement in one of fifty-one countries which have offered to receive them.

Some of the countries have opened their doors only a crack, admitting only five or six new settlers, usually relatives of their citizens. Others, like Great Britain, Canada, Belgium and South American countries, have taken thousands of new settlers, primarily on employment schemes and chiefly from among the single men and women or married couples without families.

Most encouraging news to displaced persons still in camps was the passage of the D. P. Act of 1948, which would permit 205,000 of them to go to the United States during a two year period, a number of whom will be doctors, dentists and nurses.

However, those still awaiting a passport to somewhere have taken a positive part in improving their lot. Instead of sitting on their suitcases in the 46 square feet of space allotted each displaced person, they have assumed the task of self government in their communities; they have enrolled in vocational training courses; they publish newspapers and magazines (of which there are seventy-two in the United States Zone), they supply the skills needed by the community—its doctors, nurses, dentists, teachers, engineers, lawyers, camp police, maintenance workers, seamstresses.

When the International Refugee Organization assumed responsibility for the camps, there were 2,500 international recruited employees administering approximately the same number of displaced persons, who are now supervised by 750 International Refugee Organization employees. The difference was made possible by the increased emphasis placed on assigning to displaced persons the responsibilities for running their own affairs.

In the medical program for the refugee population the displaced persons have also assumed a large part of organizing their own affairs and are now largely responsible for much of the medical organization and services.

In the United States Zone of Germany the international staff of medical officers who supervise the public health program in the displaced persons' camps has been greatly reduced in the past year with consequent responsibilities devolving on physicians and nurses who are displaced persons. There remains only a small supervisory staff of International Refugee Organization medical officers who have over-all responsibility for the medical and hospital services. That the health records of the displaced persons remain satisfactory and, in fact, progressively improve is a particular tribute to the large number of D. P. doctors and other medical personnel who staff the International Refugee Organization hospitals and camp clinics. Generally speaking, it can be said that the health status of the displaced persons is good, and this is confirmed by all available statistics on hospitalization rates, communicable diseases and infant mortality rates. The nutritional status in general compares favorably with that of most Western European countries today.

The population of displaced persons has available to it an extensive hospital and camp medical service largely maintained by the loyal work of the displaced persons medical personnel of all categories. In the United States Zone of Germany there are 2,733 hospital beds for tuberculous patients and 4,616 hospital beds for general patients. All these hospital beds are in hospitals operated by the International Refugee Organization, and in addition the International Refugee Organization has

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Part I was written by Dr. Findlay, chief medical officer, International Refugee Organization, United States Zone, Germany, and part II by Dr. Burgess, chairman of the Medical Teaching Mission.

contracted with many German hospitals for the additional care of displaced persons.

The average displaced person living in a large camp has immediately available to him, inside his own community, a full range of medical clinics, staffed for the most part by specialists in their particular fields of medicine. The camp polyclinic usually centers round the camp hospital or infirmary and comprises a camp pharmacy, general medical clinic, special clinics for gynecology, children's diseases, venereal diseases and tuberculosis. In addition there is usually a well-baby clinic, infants' milk center, school clinic and school feeding center. It will be seen, therefore, that the displaced person has available to him a more easily accessible and more extensive medical service than he has probably ever experienced before. Tuberculosis is subject to special control measures, and a network of tuberculosis control clinics is in operation throughout the United States Zone of Germany, staffed by specialists in tuberculosis, both displaced persons and German. In conjunction with these control clinics a mass roentgen examination is at present in progress and a mass BCG vaccination program was completed during the summer of 1948. A rehabilitation program, both for selected persons with tuberculosis and for other disabled persons, has been started and will be extended during the coming six months. The incidence of communicable diseases among the displaced persons is remarkably low and immunization precautions and spraying with DDT (dichlorodiphenyltrichloroethane) are routine. During the summer of 1948 an epidemic of typhoid ocurred in one locality in Bavaria because of an infected water main which supplied a displaced persons' community as well as the neighboring German town. In the German community there occurred 1,018 cases of typhoid with 83 deaths, while in the displaced persons' camp concerned there were 14 cases of very mild typhoid and no deaths.

MEDICAL POPULATION

During 1948 a special board was constituted by the International Refugee Organization to establish and register the medical credentials of displaced and refugee physicians and other medical personnel. A special board was established for the same purpose of registering qualified nurses and midwives: similar boards constituted by the International Refugee Organization were established in other zones of Germany and other areas of its operation. The special qualifications (medical) screening board established in the United States Zone of Germany consisted of five permanent members and a number of consultant members. The members of the board were carefully selected by the International Refugee Organization on account of their nationality and knowledge of medical schools of Eastern Europe. The president of the board is Professor Jenö Kramar, a Hungarian professor and former Rockefeller scholar who is referred to again in the second part of this paper. The board and consultants are all themselves displaced persons. They were charged with the responsibility of interviewing all medical and dental personnel and registering their qualifications. In a large number of cases the doctors among the displaced persons had managed to retain their original diplomas or documents of medical qualification, and in these cases the work of the board was relatively simple, although in all cases identity and credentials were scrupulously checked. In many other cases, however, the doctor, during his years of hardship, often in a concentration camp, had lost all trace of his original documents. Such cases were fully investigated by the board. Photostatic copies or certificates of qualification could sometimes be obtained from the original medical school, and many other means were followed by the board in establishing the medical register. It can be stated with the fullest confidence that the work of this board has been done according to the highest concepts of medical ethics, and that the medical register of the International Refugee Organization is a true reflection of the medical qualifications of the displaced persons registered. The International Refugee Organization is issuing to each person registered a certificate stating the particulars of his original medical qualifications. As a result of this registration there are at the present time in the United States Zone of Germany 1,461 registered refugee physicians, of whom 901 are general practitioners.

It will be seen, therefore, that the resettlement of these refugee physicians, many of whom are men of high medical caliber, is a major problem facing the International Refugee Organization today. At present many of these doctors are filling their time by caring for the medical requirements of their own groups of displaced persons. Others are unemployed and longing for the day when they can again put their knowledge and skills to the benefit of communities. Others, already frustrated by their years in concentration camps during the war or in displaced persons' camps since their liberation, have accepted work opportunities as laborers in countries offering resettlement. There is, without a doubt, a large number of well trained and widely experienced physicians anxiously awaiting the opportunity to give a wider service.

In the field of medical education it has not been possible to do a great deal since the end of World War II, although much excellent work has been done in nursing education. All graduate nurses among the displaced persons have benefited by refresher courses. In the summer of 1948, however, it has proved possible for the International Refugee Organization to organize, with the assistance of voluntary agencies, two postgraduate medical refresher courses in a finely established International Refugee Organization hospital in Munich. The International Refugee Organization approached the Unitarian Services Committee in New York, a committee with extensive experience in organizing medical postgraduate courses in Europe, with a view to the establishment of such a course for physicians among displaced persons. The Unitarian Services Committee willingly accepted this proposal and agreed to sponsor the arrangements for the course in the United States.

Dr. Alex. M. Burgess, who contributes the second part of this paper, was appointed as chairman of this medical teaching mission. Dr. Burgess, physician in chief at the Rhode Island Hospital until January 1948 and professor of health and hygiene at Brown University, had as his colleagues Dr. Peter Chase, retired senior surgeon of Rhode Island Hospital, Dr. Benjamin Kramer, associate professor of pediatrics, Long Island Medical College, Dr. Sidney Greenberg, instructor in medicine at Cornell Medical School, and Dr. Robert Alter, recently appointed professor of obstetrics at the American University, Beirut, Lebanon.

The medical specialists selected as students for these postgraduate courses were selected by the International Refugee Organization medical officers and by the medical director of the American Joint Distribution Committee, one of the voluntary agencies supporting the International Refugee Organization in this teaching project.

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PART II

With the background of information that has been presented by Dr. Findlay it remains to describe the actual operation of the mission and as far as is possible at this time to evaluate the results that have been achieved. The original plan of the course has in the main been followed. Certain deviations were made in the first of the four week sessions because of the death of a relative of one of the members of the mission which necessitated his return to America. Furthermore, about three quarters of the teaching material, slides, charts and so forth did not arrive until the course had been in operation for two and a half weeks. These difficulties were overcome in the following manner.

Professor Jenö Kramar, himself a displaced person, conducted the work in pediatrics for the first two weeks in the place of Dr. Benjamin Kramer. He had formerly been professor of pediatrics at Szegad in Hungary, as well as dean and rector of the university. He was familiar with medical literature through 1943. His teaching laid the ground work for the presentations of newer material made by Dr. Kramer on his return at the beginning of the third week.

In place of the slides the staff was forced to use various illustrations from medical books and periodicals or to improvise charts, but these were exhibited successfully by the use of an excellent epidiascope, which the mission was able to secure from Professor Singer, Director of the department of pathology of the hospital.

The routine work in the course consisted of ward rounds or clinics from 9 to 10:30 a. m. and "lecture periods" at 11:00 a. m., 2 p. m. and 3:30 p. m. These "lectures" were presentations of various topics, each by a member of the mission, followed by a discussion period of varying length. In some instances they assumed the form of panel discussions in which various aspects of a subject were presented, each by a different person, and these were followed by a general question and answer period. For example, thyroid disease was taken up by the internist, then by the pediatrician, the gynecologist and the surgeon. The regular work of the day ended at 5 p. m., and on three evenings a week a medical motion picture, followed by another which was nonmedical, was exhibited for the entertainment of those who cared to attend. This type of daily program was carried on five days a week, with Saturday and Sunday free to allow those enrolled in the course to have time for study and recreation.

A medical library was established through funds furnished by the International Refugee Organization, with a D. P. physician on duty at appropriate times as librarian. In addition to this every physician enrolled received one textbook in English as a permanent possession, the gift of the International Refugee Organization. The library contained volumes written in English and purchased in America, as well as some in German which were obtained in Switzerland.

Certain additional features were added to the original plan of work. A weekly conference on pathology with the demonstration of postmortem material, both gross and microscopic, was held by Professor Singer. These were very instructive and valuable exercises and in many instances were related directly to the subject matter which had been taken up in the "lecture periods."

Besides these demonstrations, visits to various clinics were made by the groups interested in each of the specialties with which the mission was concerned. For example, the internists visited the International Refugee Organization sanatorium for treatment of tuberculosis at Gauting, where an excellent clinical meeting was held for their benefit, and the latest methods were demonstrated by staff members most of whom were themselves displaced persons. The surgical group made visits to an orthopedic clinic and the U. S. Army 98th General Hospital, and the pediatric group attended two pediatric clinics in the city of Munich. In the same way those interested in obstetrics and gynecology went to the University Frauen-Klinik in addition to their daily attendance at the International Refugee Organization Altersheim Hospital, Munich.

The language difficulty in the exercises was overcome by the use of expert interpreters during the lecture hours. The best of these were persons who were attending the course. As a rule presentations of cases were given in German, and many of the lectures had previously been translated into German and given to the students. The organization of the mission was completed such a short time before the work commenced that one of the members had barely one week in which to prepare his material and no one had a sufficient opportunity to give to the work the time it deserved.

Before considering the results achieved by the courses it is appropriate to discuss the type of physician who had been enrolled for the work. As Dr. Findlay has pointed out, these persons had been carefully selected, and it was realized by the members of the mission before the work began that the persons to whom they were to give instruction were capable and highly trained. In the address of welcome at the beginning of each course the chairman of the mission stressed the fact that the exercises represented conferences between colleagues and that the only reason why the instructors were in a positon to take the lead in the presentations was because they had been so situated that they had maintained touch with the advances in their specialties during and after the war years, while, on the contrary, their less fortunate European colleagues had been unable to maintain such contact. In many instances it became obvious that the prewar experience and training of some persons in certain phases of the subjects discussed considerably exceeded that of the instructors. This would be of necessity the case when such broad fields of work as general medicine, general surgery and the other specialties under consideration had to be presented each by an individual teacher. This situation is illustrated by the fact that two of the "students" were expert cardiologists each of whom had recently completed a book on electrocardiography. One of these men was of great assistance in discussions and demonstrations on this topic. Several were expert in diseases of the respiratory system; several were pediatricians of many years' experience, and there were a number of highly trained surgeons in the course. The very fact of their familiarity with their own specialties made these men all the more eager to learn of the advances that had been made since they had been in touch with world medicine. By the same token they were ideal students who as a rule realized instantly the value and implications of the new methods and technics which were presented to them. In addition to more complicated matters, discussions and demonstrations of such fundamentals as routine complete physical examinations and history taking were taken up on several occasions, and the group demonstrated to all concerned that their ideas and methods were sound. Such exercises were of benefit to all. The very limitations as to supplies and equipment under which D. P. physicians have been forced to work have emphasized to them the value of many of the less complicated methods of dealing with disease, and in general they demonstrated their ability to excel in such matters.

In discussions with many of the physicians about their work in the displaced persons' camps it became evident that some of them had been showing remarkable energy and initiative under discouraging conditions. The striking health records of the D. P. population to which Dr. Findlay has referred is evidence of this. Many individual examples could be cited; for instance, the two young men, one from Hungary and one from Latvia, who collaborated in a chest survey of 6,000 of their people in which they used a single fluoroscope. This was a pioneer effort which focused the attention of the authorities on the need for such work and resulted in the importation of adequate apparatus and personnel. The same two physicians are now engaged in an extensive study of the condition of children born in displaced persons' camps. A number of experienced surgeons were present in the group, several of whom have been having a large operative experience in hospitals staffed by displaced persons. As has already been mentioned, the number of professors and teachers of lower ranks enrolled in the course was large.

In addition to a familiarity with the professional competence of the physicians taking the courses, the members of this teaching mission have been enabled to become rather intimately acquainted with a good proportion of their students and to form some warm friendships. The results of the work may be considered from three points of view: (1) the professional education of the displaced person physician, (2) the improvement of his morale and (3) the demonstration of his standing as a man and a physician.

As a teaching project the courses appear to have been successful. The students very generally have expressed appreciation and enthusiasm. As to morale, there is no doubt whatever that the opportunity for these physicians to participate in professional discussions and hospital exercises in their normal roles as expert has brought back to them a feeling of dignity and self confidence which, because of the harsh treatment to which they have been subjected, had in many instances sunk to a low level. As to the third point, the evaluation of these persons as members of the profession, it is the unanimous opinion of the members of the Munich Medical Teaching Mission that any country in which one of these physicians eventually settles may count itself fortunate because of the acquisition of a citizen of the highest type who cannot but enrich the life of his community.

Clinical Notes, Suggestions and New Instruments

ACUTE PERITONITIS FOLLOWING RUPTURE OF MESENTERIC LYMPH NODES

Report of Its Occurrence in a Case of Typhoid and in a Case of Paratyphoid

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and
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Although involvement of mesenteric lymph nodes in typhoid and paratyphoid is well recognized, suppuration of these nodes with rupture and peritonitis is rare.[1] We are reporting a case of acute peritonitis due to such rupture, occurring in the fourth week of typhoid, which simulated an acute perforation of a typhoid ulcer. We are also reporting from the records of the John Gaston Hospital a case of paratyphoid in which there was generalized peritonitis due to rupture of a mesenteric lymph node.

REPORT OF CASES

CASE 1.—J. L., a 14 year old white boy, was admitted to the John Gaston Hospital on June 9, 1947, because of fever, periumbilical pain, anorexia and watery diarrhea of one day's duration. This had been preceded by malaise for several days, headache and a chill. The patient had been well until the onset of the present illness. The past history was noncontributory.

On examination, the temperature was 103 F., the pulse rate 118, the respirations 20 and the blood pressure 110 systolic and 68 diastolic. The patient was poorly developed, poorly nourished, febrile and apathetic in appearance. There was moderate tenderness in the epigastrium and the periumbilical region, but no rigidity or abdominal distention. The spleen was not felt. The results of the remainder of the physical examination were negative.

On admission, the white blood cell count was 10,350 and the hemoglobin was 13 Gm. The urinalysis showed a specific gravity of 1.028, albumin (2 plus) and no sugar; microscopic observations were normal. Blood, urine and stool cultures of June 10 were all positive for Eberthella typhosa. The results of typhoid agglutination were positive in dilution of 1 to 320 on June 25 and 1 to 2,560 on July 2.

There was a remittent fever, with temperature of 100 to 104 F., for three weeks. In the fourth week, the temperature declined to an intermittent 100 to 101 F. The patient was feeling fairly well by this time. On the morning of July 3, the twenty-seventh day of his illness, the patient was suddenly seized with a severe continuous generalized abdominal pain. There was nausea but no vomiting. This was followed by a rise in temperature from 99 to 103 F. and increase in pulse rate from 90 to 150. Examination at this time revealed abdominal distention, decided generalized abdominal tenderness, rebound tenderness and rigidity. The tenderness and rigidity were pronounced in the right lower quadrant of the abdomen. Peristalsis was audible.

In approximately two to three hours after its onset, the pain had become more localized in the right lower quadrant. At this time, the white blood cell count was 20,750. A roentgenogram of the chest, taken with the patient in an upright position, showed no free air under the diaphragm.

The patient was operated on approximately five hours after the onset of the pain, with a preoperative diagnosis of ruptured typhoid ulcer. With the patient under cyclopropane anesthesia, a right rectus incision was made and exploration carried out. Distention was seen uniformly throughout the intestinal tract, with a moderate amount of yellowish purulent fluid collected about the distended loops. The peritoneum showed decided hyperemia. What was thought to be typhoid ulcers were palpated through the wall of the lower part of the ileum. No per-

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[1] Bell, E. T.: A Text-Book of Pathology, ed. 6, Philadelphia, Lea & Febiger, 1947.

foration was observed. Further examination revealed a group of lymph nodes in the ileocecal region which were enlarged and apparently fused together. Considerable purulent material was being discharged from a point of rupture in this group of nodes. Cultures were taken. The peritoneal cavity was suctioned out and drainage established with a soft rubber tissue drain through a stab wound in the right lower quadrant of the abdomen. The incision was closed without drainage.

The immediate postoperative course was stormy, being characterized by high temperature, accelerated pulse and pronounced apprehension. Treatment consisted of suction siphonage, intravenous administration of fluids, blood transfusions, intramuscular injection of streptomycin, 2 Gm. per day for eight days, intramuscular injection of penicillin, 400,000 units per day for five days and 240,000 units per day for four days, and intravenous and oral administration of sulfadiazine, 4.5 to 6 Gm. per day for fourteen days. Improvement was noted on the third postoperative day, and by the fifth postoperative day the temperature and pulse rate had returned to normal. At this time, suction siphonage was discontinued and all drains removed. The operative wound showed no evidence of infection. Improvement thereafter was rapid, with increasing strength and appetite. Cultures of the stool became negative for typhoid bacilli on July 31 and remained negative thereafter. The culture taken at operation was negative. The patient was discharged as cured on July 31, the twenty-seventh postoperative day.

Case 2.—L. O., a 16 year old Negro girl, was admitted to the Memphis General Hospital (now John Gaston Hospital) on Dec. 29, 1923, complaining of generalized abdominal pain and fever. The onset was insidious two or three weeks before admission, with malaise, weakness and fever. The abdominal pain was not severe. There had been no diarrhea. The past history was noncontributory.

On examination, the pulse rate was 120 and the temperature 104 F. The patient was fairly well nourished, feverish and acutely ill. There was generalized abdominal distention, with a tympanitic percussion note and slight generalized abdominal tenderness. The liver, spleen and kidneys were not felt. The pelvic examination revealed moderate tenderness and fixation about the uterus. There was a sensation of a fluctuant bulging in the left side of the fornix.

Laboratory studies on admission showed a red blood cell count of 3,750,000, hemoglobin, 75 per cent, a white blood cell count of 12,800, with 78 per cent neutrophils and 22 per cent lymphocytes, and normal urine. A urine culture was positive for paratyphoid bacilli. On Jan. 4, 1924, a blood culture was positive for paratyphoid bacilli. The Widal reaction was negative, and the stool culture was negative for typhoid bacilli.

Nausea and vomiting occurred, and the patient had diarrhea. The abdominal observations apparently remained as on admission. There was a remittent fever, with temperature ranging from 102 to 105 F. The pulse rate was rapid, ranging from 110 to 140. Treatment was supportive. On the eleventh hospital day, the patient became much worse; she died the next day, approximately four weeks after the onset of her illness.

Report of Autopsy.—The gross examination showed the peritoneal cavity to contain a moderate amount of fluid. There was pronounced hyperemia of the small intestine and the colon, especially near the ileocecal junction. The intestines were friable and tore with ease. Loops of the large and small intestine were matted together and also to the parietal peritoneum, but no definite adhesions or exudate could be made out grossly. The lumen of the small and large intestine contained a reddish gray material thought to be blood and bismuth. The mucosa of the ileum and the large intestine was edematous, elevated, hyperemic and raw. No definite ulcerations were present. No perforation was seen. There was no definite involvement of Peyer's patches or the solitary lymph follicles. One single mesenteric node was seen which had become extensively necrotic and exuded a thick creamy yellowish material and which was impossible to section. Strangely, every other mesenteric node appeared only slightly increased in size, if at all, and was otherwise normal in appearance. The spleen did not appear enlarged. The remainder of the gross observations were not contributory except for what appeared to be scattered pneumonia in the bases of the lungs bilaterally. Microscopic examination of the small intestine showed much fibrin on the serosal surface. Intermingled in its meshes were many leukocytes and erythrocytes. The capillaries showed decided congestion. There was slight swelling of Peyer's patches and the solitary lymph follicles, but they were not otherwise involved. The spleen showed the microscopic picture of acute splenic tumor. In the lungs, scattered alveoli contained inflammatory elements, with no involvement of the bronchi. The primary diagnosis was paratyphoid with catarrhal hemorrhagic enteritis, necrotic mesenteric lymphadenitis and generalized peritonitis. The subsidiary disease was lobular pneumonia.

COMMENT

It is difficult to estimate the incidence of peritonitis due to suppuration of mesenteric lymph nodes in typhoid except to say that it is uncommon. In 1,472 cases of typhoid in the case records of the John Gaston Hospital since 1922 our case was the only one recorded. In a recent clinical analysis of 360 cases of typhoid from the Charity Hospital of New Orleans, this complication was not discovered at all either by laparotomy or at postmortem examination.[2]

In the older textbooks,[3] the condition is referred to as being rare. Hare and Beardsley [3c] collected 4 cases, reported by others, of abdominal abscesses in typhoid, presumably due to suppurating mesenteric lymph nodes, but this was not proved in every case. Another 2 cases are mentioned by the same authors in which there was well demonstrated suppuration of mesenteric nodes, but no peritonitis was mentioned. In 1 of the latter cases, there was rupture of a mesenteric artery secondary to a suppurating gland near the cecum. In a review of peritonitis without perforation in typhoid, Yates [4] found in the literature 4 other cases of peritonitis due to rupture of mesenteric lymph nodes.

More recently, 1 case of abdominal abscess [5] and 1 case of peritonitis [6] have been reported as due to suppurating mesenteric lymph nodes. A case of pelvic abscess due to the typhoid bacillus was reported in which this was the suspected cause, but it was not proved.[7]

It may be noted that our preoperative diagnosis was acute peritonitis due to a ruptured typhoid ulcer. It would seem difficult, in the absence of free air under the diaphragm, to make a correct differentiation clinically between these two conditions.

This case is the only one of its kind reported in which streptomycin was used. The gratifying postoperative course may have been partly due to this factor.

The case of paratyphoid with generalized peritonitis associated with a ruptured suppurating mesenteric lymph node was the only case with this complication among 78 cases of paratyphoid from the case records of the John Gaston Hospital since 1922. In some of these instances the paratyphoid infection was concurrent with typhoid. This complication would appear to be at least as uncommon in paratyphoid as in typhoid. The complications of paratyphoid are of the same general character and relative incidence as of typhoid, but are much less frequent.[8]

SUMMARY

A case of acute peritonitis in the course of typhoid, due to suppuration and rupture of mesenteric lymph nodes, is reported. A cure was effected following laparotomy and drainage. Streptomycin therapy was used postoperatively. A case of generalized peritonitis in paratyphoid, with the same cause, diagnosed at postmortem examination, is also reported.

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[2] Stuart, B. M., and Pullen, R. L.: Typhoid: Clinical Analysis of Three Hundred and Sixty Cases, Arch. Int. Med. **78:** 629 (Dec.) 1946.

[3] (*a*) Curschmann, H.: Typhoid Fever and Typhus Fever, Philadelphia, W. B. Saunders Company, 1901. (*b*) Osler, W.: Modern Medicine, ed. 1, Philadelphia, Lea Brothers & Company., 1907, vol. 2. (*c*) Hare, H. A., and Beardsley, E. J. G.: The Medical Complications, Accidents, and Sequels of Typhoid Fever, ed. 2, Philadelphia, Lea & Febiger, 1909.

[4] Yates, J. L.: Peritonitis in Typhoid Fever Without Perforation, Am. Med. **5:** 700 (May 2) 1903.

[5] Kern, A. G.: Mesenteric Abscess Complicating Typhoid Fever: Case, J. Tennessee M. A. **25:** 260 (July) 1932.

[6] Grenet, H.; Leveuf, J.; Isaac-Georges, P., and Langlois, L.: Peritonitis Following Rupture of Suppurating Mesenteric Lymph Node in the Course of Typhoid Fever, Bull. Soc. pédiat. de Paris **35:** 163 (March) 1937.

[7] Ransom, M. B., and Dunscombe, W. K.: Pelvic Abscess Caused by Bacterium Typhosum, Lancet **1:** 1398 (June 27) 1931.

[8] Jennings, C. G.: The Paratyphoid Infections, in Tice, F.: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc., 1939, vol. 4.

Council on Physical Medicine

The Council's Consultants on Roentgen Rays and Radium and Medical Aspects of Atomic Energy adopted the following article as one of at least two treatises on atomic energy for publication under the auspices of the Council. The Consultants on Roentgen Rays and Radium and the Medical Aspects of Atomic Energy are: Drs. W. Edward Chamberlain, Arthur C. Christie, Kenneth S. Cole, L. F. Curtiss, Edwin C. Ernst, Gioacchino Failla, Hymer L. Friedell, R. R. Newell, Eugene P. Pendergrass, Ursus V. Portmann, Lauriston S. Taylor, Shields Warren, Stafford Warren and J. L. Weatherwax. The Council appreciates the cooperation of the Consultants on Roentgen Rays and Radium and the Medical Aspects of Atomic Energy.

Howard A. Carter, *Secretary.*

RADIATION HYGIENE

Hazards to Physicians, Patients, Nurses and Others from Use of Radioactive Isotopes

W. EDWARD CHAMBERLAIN, M.D.
R. R. NEWELL, M.D., *Chairman*
LAURISTON TAYLOR, Ph.D.
HAROLD WYCKOFF, Ph.D., *Alternate*
Subcommittee

The atomic age confronts the medical profession with seemingly unlimited opportunities, but equally with the gravest responsibilities. To match the eagerness with which he plunges into investigation of the tremendous possibilities of advance in medical knowledge, the physician investigator must possess the keenest awareness of the hazards to himself, his patients and working associates involved in the study and manipulation of radioactive isotopes and other products of atomic fission. Fundamental is the fact that there is no antidote to radiation injury. Prevention and unrelenting watchfulness are the requirements for what may be called radiation hygiene. Even physicians who are not engaged in this research must have knowledge of the technics involved, for they may have patients who have been exposed to radiations.

The successful technics developed in the Manhattan District and continuously improved and elaborated by the agencies of the Atomic Energy Commission are, of course, available and must be learned. Many of the radiation hazards met in making the atom bomb were quantitatively, and some of them qualitatively, quite different from what the physician will meet as an investigator. The problems of these controls were solved by the work of many men—physicians, chemists, biologists—in cooperation. A new specialist appeared, called "health physicist," who had to devise and apply methods of detection of hazard and of protection against it. With the continual development of new production processes and research technics, the experience and resourcefulness of the health physicists are continually called on. Hygiene remains, however, the obligation of the medical profession, and physicians must not shrug off this department of it merely because they find the health physicists' art difficult to follow and their science difficult to understand.

In using radioisotopes for medical purposes, the physician will usually have access to such consultation. It seems predictable that teamwork will always be necessary. The Atomic Energy Commission delivers isotopes only for use under control of an isotope committee, assuring sufficient breadth of scientific understanding. But even if the physician has a physicist on his team, he cannot leave radiation hazard just to him. He must, himself, take the responsibility for the health of his associates and of his patients.

In the National Laboratories, where radioisotopes are being used, avoidance of radiation has become a way of life. Radioactive materials are transported by special truck in special 200 pound lead pots and put in and taken out under the chaperonage of some one from the health physics department, who constantly measures the gamma ray intensities and keeps a critical eye on the "technic." Similar chaperonage is provided whenever a scientist does a distillation or other manipulation of an important amount of radioactive substance. At regular intervals, twice a week or twice a day, the health physicist goes through the various rooms and passages hunting with a Geiger counter for radioactive contamination on floors and benches, and sampling the atmosphere for radioactive dust. Working in small teams and lacking a "health physicist," doctors are going to have to do these things for themselves. If they are casual about it, as many have been in the handling of radium, the result will be disaster for all concerned.

Radiation hazard can be put into several classes:

A. External irradiation, beta rays and gamma rays (also roentgen rays)
   1. Injury to patient
   2. Injury to physician and others
   3. Injury to casual personnel
   4. Contamination of laboratories interfering with measurements
   5. Fogging of photographic materials
      (4 and 5 do not, of course, concern hygiene)

B. Internal irradiation, alpha, beta and gamma
   1. Overdosage, general
   2. Bad distribution leading to local overdose
   3. Pick-up of isotopes by physician and others
      (*a*) Inhalation, (*b*) ingestion, (*c*) absorption through unbroken skin and (*d*) through cuts or abrasions
   4. Escape of radioactive materials from control with later pick-up by men, animals or plants

External irradiation from isotopes will seldom endanger the patient, who is usually only briefly exposed; the danger is to the doctor and his associates, who are working with these things all the time. The patients' hazards will arise mostly from errors of judgment or blunders in technic: Doctors make errors in dosage of drugs, too, and sometimes need to administer the antidote. Here it must be repeated that there is no antidote to radiation injury.

With isotopes, doctors are using a novel set of units. A millicurie means 37,000,000 disintegrations per second, an amount in milligrams running from about 16 for plutonium to a millionth for radiosodium. The biologic significance of a millicurie varies with the type and energy of the disintegration and the distribution of the isotope in or on the body. It is at least possible that some doctors will make the superficial but erroneous assumption that they know what a millicurie is because they have used millicurie radon implants.

The great hope for the future of isotopes in therapy is the ability of some of them to concentrate in an organ or tissue. This is at the same time a great hazard, for precise dosage depends on precise estimate of how large a volume of tissue will be holding the dose given, when it has become thus concentrated. The effect depends not on the total dose, but on its specific concentration in the susceptible organ. In fact, for alpha emitters and soft beta emitters, account must be taken of uneven distribution within the organ or within the cell, and one must think of dose in disintegrations per cubic micron.

The millicurie is a disintegration rate, and so the biologic dose depends on how long the irradiation lasts. The millicurie dose falls away according to the half-life of the isotope and also by excretory losses from the body. In all these things there is much room for errors in calculation and in judgment, even gross blunders.

Radium, plutonium and radiostrontium are carcinogenic, having long physical half-lives and lie locked up in the bones with very slow excretion. Two microcuries of radium (being radium, this is 2 micrograms), can kill in seven years, a quantity which for many other elements would rightly be considered a harmless tracer dose.

Hazard from Radioactive Isotopes

	Alpha	Beta	Gamma
Proximity Total Body		Doctor, chemist E. g., P, I, Na, Au	Everybody E. g., Ra, I, Co, Na, As, Au
Proximity Hands		Doctor, chemist, etc.	
		E. g., Ra, Na, P, I, As, C, S, Yt, Au	E. g., Ra, Na, I, As, Au
Surface contamination, especially hands	Generally assumed not effective on skin surface	Doctor, chemist, etc. Beta irradiation dominates gamma; E. g., Ra, P, Na, I, O, S, Sr, Yt, Au	
Inhalation	Everybody in the laboratories		
	Lethal dose of alpha is small E. g., Ra, Rn, Pu, Po	Beta irradiation dominates gamma; some (e. g., rare earths) which are relatively less dangerous when ingested are yet fairly readily absorbed through the lungs	
Ingestion	Everybody; doctors and assistants most likely		
	E. g., Ra, Rn, Pu, Po, etc., even though poorly absorbed	Contaminated wastes may spread hazard far and wide E. g., P, Na, I, C, S, Sr	
Parenteral absorption, wounds, etc.	Doctor and assistants E. g., Pu	Doctor and assistants But unimportant compared to surface contamination	
Percutaneous absorption	Doctor, chemist, etc. Any radioactive isotope in fatty base or in fat solvent		
Bad clinical judgment	Patients and experimental subjects a. By overdosing, total body dose; e. g., P, Na b. Though failure to consider large total accumulation of injury due to isotope's long half-life; e. g., 4 yr. Fe, 4,000 yr. C, etc., and confusion of 8 day I with 12 hr. I c. By erroneous estimation of the concentration in a particular organ; e. g., I, Sr, P		

Gamma rays from isotopes in use and in storage physicians already know how to avoid, for they have years of experience with radium. (It is true that many doctors have destroyed their fingers by careless handling of radium.) But the fact of familiarity with radium would tend to make physicians careless with the other things, for all have learned to take 50 mg. of radium rather casually. But they have not been giving injections or determining test tube reactions with radium. With radium, one fears lest one lose it. With radioisotopes, one ought to fear lest one spill it. One leaves gamma rays behind when one quits the room. When a beta ray emitter is spilled on the fingers the operator carries with him what he cannot wash off. Moreover, beta rays, being highly absorbable, are biologically extremely effective. So even a small millicurie amount gives a large dose by the time that the contaminated cuticle has worn away.

In the chemical laboratory dirty glassware is washed and used again, and spent chemicals are dumped down the drain. Dead animals are carried to the dump or incinerator. Urine and feces go down the sewer. In the isotope laboratory, however, all these may be radioactive. It is a heavy responsibility to see that nothing "hot" is reused and that no dangerous quantities of radioactivity find their way into the sewer, or to an open incinerator or dump. Algae especially, but also higher plants, are capable of reconcentrating some elements which have been diluted and spread on the fields, so that mere dilution cannot be depended on for safety. Wet and dry radioactive wastes have to be collected and isolated, maybe by deep burial.

Many physicians are avid to put radioisotopes to work for medicine, to proceed as fast as possible to apply them to clinical problems and therapeutic arts. Are we physicians going to be able—as a profession—to proceed at equal speed in learning the art of protecting our patients, ourselves, our associates and the communities we live in from the grave and insidious dangers of these very poisonous substances? This paper is intended to point out the dangers and to make some suggestions for avoiding them.

The accompanying table is offered as a graphic summary of the hazards that have been discussed.

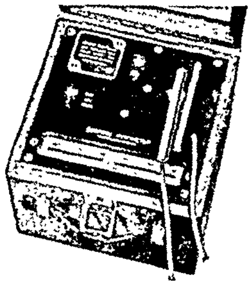
The Council on Physical Medicine has authorized publication of the following reports. Howard A. Carter, *Secretary.*

RAUH SURFACE PYROMETER ACCEPTABLE

Manufacturer: E. M. Rauh & Co., Inc., 2 Parker Avenue, Buffalo 14, N. Y.

The Rauh Surface Pyrometer is a device for making rapid surveys of the skin temperature of the human body. The apparatus is enclosed in a mahogany-finished case measuring 20 by 20 by 20 cm. (17¾ inches). The whole weighs 2.3 Kg.; the shipping weight for domestic shipment is about 2.7 Kg., and for foreign shipment about 7.3 Kg. (5, 6 and 16 pounds respectively). The standard model operates on two dry cells needed to supply the light source; models for operation on direct or alternating current are also available.

The sensing element is at the end of an applicator which is connected by a cable to the instrument in the case. This element is a thermopile of small mass, since the smaller the mass to be warmed (or cooled) by the contact with the skin, the quicker and more accurate will be the reading. The current from the thermopile is recorded by a mirror suspended in such a way as to reflect light on a transparent scale; the latter can be read in either Centigrade or Fahrenheit within the range from 15.5 to 43 C. (60 to 110 F.).



Rauh Surface Pyrometer.

The instrument has been examined in the Council laboratory, and evidence of its performance under clinical conditions has been obtained from sources acceptable to the Council. Temperature measurements taken with this instrument must be interpreted, because they are affected by all the variables known to influence skin temperatures. However, the instrument is of value, for instance, in making rapid surveys of the surface temperatures of symmetric areas of two extremities, where circumstances give a basis of comparison. The data are of use in cases of peripheral vascular disease and may help in the differential diagnosis between organic vascular occlusions and fluctuations of vasomotor tone.

The Council on Physical Medicine voted to include the Rauh Surface Pyrometer in its list of accepted devices.

SANBORN INSTOMATIC CARDIETTE ACCEPTABLE

Manufacturer: Sanborn Company, 39 Osborn Street, Cambridge 39, Mass.

The Sanborn Instomatic Cardiette is a portable electrocardiograph weighing 10.4 Kg. (23 pounds). In the recording mechanism a beam of light is cast onto a strip of sensitized paper 5.75 cm. (2¼ inches) wide. The galvanometer deflection is indicated by a shadowed line moving across the paper. This results in a white line 2 mm. wide against a dark background on the developed photographic record. Narrow white lines also mark the strip into 1 mm. squares, every fifth one of which is slightly wider. A 30 meter (100 foot) roll of sensitized paper is contained in a removable magazine equipped with a red window to permit examination of the paper supply. A slot, with hinged cover, allows marking on the back of the record.

The paper is pulled past the recording point and into a removable light tight container which makes it possible to take the exposed record to the dark room. Removing this container from the machine automatically cuts the film. To prevent losing the end of a record, it is necessary to allow an extra few inches to pass into the container before removing from the machine.

The paper drive is by means of a hand wound spring motor which will run for four minutes (610 cm. or 20 feet of record) on one winding. The speed is adjustable if correction becomes necessary. A rewind indicator and film footage indicator are provided on the panel.

The apparatus submitted was subjected to the tests called for by the Minimum Requirements for Acceptable Electrocardiographs published by the Council on Physical Medicine in THE JOURNAL (134:455 [May 31] 1947). It was found to satisfy these requirements.

The Council on Physical Medicine voted to include the Sanborn Instomatic Cardiette in its list of accepted devices.

PURITAN 11-GA OXYGEN INHALATION APPARATUS ACCEPTABLE

Manufacturer: Puritan Compressed Gas Corp., 1240 W. Jackson Blvd., Chicago 7.

This portable assembly consists of a safety pressure-reducing regulator equipped with a flow gage calibrated in liters per minute; a humidifying assembly, which is to be attached to the back of the regulator by a removable clamp; two bottles fitted with two-hole stoppers and four metal tubes, one having a gas spray attachment; and three pieces of pure gum tubing. Also included in this unit is a cylinder base designed to prevent possible tipping when placed on the bottom of either D or E size cylinders. A wrench is enclosed for operating the cylinder valve. If it is desired to use a nasal catheter for administration of oxygen, the catheter may be attached to the pure gum tubing in place of the face cone.

The Council on Physical Medicine voted to include the Puritan 11-GA Oxygen Inhalation Apparatus in its list of accepted devices.

COLLINS METABOLEX ACCEPTABLE

Manufacturer: Warren E. Collins, Inc., 555 Huntington Avenue, Boston 15, Mass.

The Collins Metabolex is an apparatus designed for use in determining basal metabolic rates. It is mounted on a three-legged stand provided with casters; the stand bears, underneath, the oxygen tank needed for filling the spirometer which is on top. The spirometer is of the accordion or bellows type, but has the general form of a circular cylinder and moves vertically. Tracings are made on an aluminum drum driven either by spring movement or by electric motor (optional). If the spring movement is used, no electric connections are necessary. If the electric clock is used, a 110 volt controlled-frequency alternating current is requisite.

With the stand, the apparatus is 126 cm. (49½ inches) high and weighs 16 Kg. (35 pounds). Without the stand, it is 51 cm. (20 inches) high and weighs 11.3 Kg. (25 pounds). The floor space required is 51 by 61 cm. (20 by 24 inches). The reservoir for soda lime has a capacity of 3.8 liters (4 quarts). The oxygen tank provided for is the 300 liter (80 gallon) size. The shipping weight of the apparatus alone is 17 Kg. (37½ pounds); that of the stand is 9.5 Kg. (21 pounds).

The apparatus, on examination, was found to be simple and attractive in design, and to give satisfactory results in the hands of experienced users.

The Council on Physical Medicine voted to include the Collins Metabolex in its list of accepted devices.

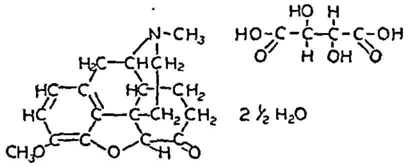
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

DIHYDROCODEINONE BITARTRATE.—Hycodan Bitartrate-Endo.—The hydrated bitartrate of dihydrocodeine. $C_{18}H_{21}O_3N \cdot C_4H_6O_6 \cdot 2\frac{1}{2}H_2O$.—M. W. 494.26.—The structural formula of dihydrocodeinone bitartrate may be represented as follows:



Actions and Uses.—Dihydrocodeinone bitartrate is essentially similar in action to codeine salts but is more active when compared with codeine on a weight basis and is also more addicting. It is useful primarily as an antitussive and may be used for this purpose in the same manner as codeine, over which it has no clearcut advantage.

Dosage.—Adults, 5 to 15 mg., 3 or 4 times within a 24 hour period. The higher dosage is rarely necessary. Children 2 years of age or older may be given one-half the adult dose; younger children one-quarter the adult dose.

Tests and Standards.—

Dihydrocodeinone bitartrate occurs as a white, odorless, crystalline powder. It is freely soluble in water and slightly soluble in alcohol.

Dissolve about 100 mg. of dihydrocodeinone bitartrate in 1 cc. of water, add 3 drops of ammonia T. S. to precipitate the free base and allow the mixture to stand for 1 hour. Collect the precipitate on a small suction filter (retain the filtrate), wash it with 1 cc. of cold water and remove the excess water by suction. Dry the precipitated dihydrocodeinone for 2 hours at 100 C.: it melts at 194-196 C.

To the filtrate obtained after separation of the free base, add sufficient silver nitrate T. S. to produce a cloudy solution; then add just sufficient ammonia T. S. to render the solution clear, and warm the mixture on a steam bath: a deposit of metallic silver on the walls of the test tube indicates the presence of tartrates.

To about 3 mg. of dihydrocodeinone bitartrate dissolved in 0.1 cc. of water, add 5 cc. of sulfuric acid containing 5 mg. of selenious acid per cc.: the mixture yields a green color which changes to blue and then slowly to purple *(distinction from morphine, which yields a blue color changing to green and then to brown).*

Dissolve about 20 mg. of dihydrocodeinone bitartrate in 5 cc. of sulfuric acid, add 1 drop of ferric chloride T. S. and warm in a steam bath: the solution does not change in color when heated *(distinction from codeine, which gives a purple color).*

Dissolve about 100 mg. of dihydrocodeinone bitartrate and 200 mg. of hydroxylamine hydrochloride in 1 cc. of water. Cover with a watch glass and heat on a steam bath for one-half hour. Cool in ice water and add strong ammonia solution until the oxime precipitates. Collect the oxime on a filter, wash with 3 cc. of water containing 1 per cent ammonia (made by diluting 1 cc. ammonia T. S. to 10 cc.), remove the excess water by suction and dry the precipitate for 4 hours at 100 C.: the dihydrocodeinone oxime melts with decomposition between 264 and 268 C.

Prepare a one-tenth molar solution of dihydrocodeinone bitartrate in freshly boiled and cooled distilled water: the pH of the solution is between 3 and 4. Ignite about 200 mg. of dihydrocodeinone bitartrate, accurately weighed; the ash residue is not more than 0.05 per cent. Add about 100 mg. of dihydrocodeinone bitartrate to 5 cc. of sodium hydroxide T. S. and heat the mixture to boiling: no odor of ammonia is detected.

Transfer about 150 mg. of dihydrocodeinone bitartrate, accurately weighed, to a 250 cc. separator with the aid of 10 cc. of water. Drop a small piece of red litmus paper into the funnel and then add, dropwise, ammonia T. S. until the litmus paper just turns blue (about 3 drops). Extract six times with 25, 25, 20, 20, 15 and 15 cc. portions of chloroform, and collect the chloroform extracts in a 250 cc. Erlenmeyer flask after filtering through a small plug of cotton. Evaporate the combined chloroform extract almost to dryness, remove the flask from the steam bath, blowing off the remainder of the chloroform with a stream of air. Add 5 cc. of neutral alcohol and heat on a steam bath until the residue dissolves. Add 2 drops of methyl red indicator T. S. and then 20 cc. of 0.02 *N* sulfuric acid. Heat on a steam bath until the alcohol starts to reflux. Cool the flask to room temperature and titrate the excess acid with 0.02 *N* sodium hydroxide. Each cc. of 0.02 *N* sulfuric acid consumed is equivalent to 0.009884 Gm. of dihydrocodeinone bitartrate: the amount of dihydrocodeinone bitartrate found is not less than 98 per cent of the sample as received.

Endo Products, Inc., Richmond Hill, N. Y.

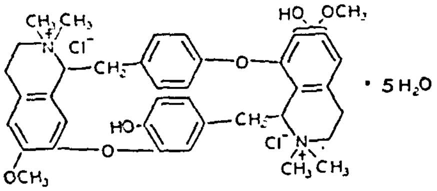
Hycodan Bitartrate *(Powder)*: 1 Gm., 5 Gm. and 10 Gm. bottles.

Syrup Hycodan Bitartrate: 5 mg. per 5 cc., 475 cc. and 3.74 liter bottles.

Tablets Hycodan Bitartrate: 5 mg.

U. S. trademark 399,421.

***d*-TUBOCURARINE CHLORIDE.** — The crystalline chloride of a quaternary base alkaloid obtainable from the bark and stems of *Chondodendron tomentosum* and related species.—$C_{38}H_{44}Cl_2N_2O_6 \cdot 5H_2O$.—M. W. 785.74. *d*-Tubocurarine chloride is standardized biologically by the rabbit "head-drop" method. The standard "head-drop" dose, HD_{50}, calculated as *d*-tubocurarine chloride pentahydrate, is 0.15 mg. per kilogram of body weight. The structural formula of *d*-tubocurarine chloride may be represented as follows:



Actions and Uses.—*d*-tubocurarine chloride may be used in conditions in which it is desirable to reduce the tone or contractile power of skeletal muscle. It is useful with light general anesthesia to obtain greater relaxation of the musculature in abdominal surgery and orthopedic manipulative procedures, to diminish the violence of muscular contractions during metrazol or electric shock therapy, and temporarily to lessen spasticity due to injury of the central nervous system or in certain spastic states of neurologic origin. It may also be used as a diagnostic agent in cases suspected to be affected with myasthenia gravis.

Dosage.—In conjunction with light surgical or orthopedic anesthesia, premedication should be carried out as usual. The following doses are applicable with general anesthetics *except ether, when only one-third of the recommended dose should be employed.* The patient is maintained at light surgical anesthesia until the stage of the operation is reached at which the greatest muscular relaxation is required. At that time 6 to 15 mg. may be given as a single intravenous injection. This is sometimes effective in about 2 minutes; if respiration ceases, the anesthetist must be prepared to continue the pulmonary exchange by pressure on the bag of the anesthetic apparatus. The dose may be calculated on the basis of 1 mg. for each 10 lb. of body weight (*one-third this amount when ether is the anesthetic*).

In therapeutic shock treatment, the usual dose is 3 mg. for each 40 lbs. of body weight; for greater safety 3 mg. less than the calculated amount should be used as the initial dose and the intravenous injection should always be given over a period of not less than 90 seconds. In spastic states, where the drug is used to permit training in the voluntary use of muscles, it may be administered intramuscularly at four day intervals. The dose is determined by trial, beginning with 3 mg. for each 40 lbs. of body weight and gradually increasing the dose until the amount producing best results is found. As a diagnostic test for myasthenia gravis, 0.3 mg. per 40 lbs. of body weight is given intravenously; marked exaggeration of symptoms appears within two minutes. As soon as a positive reaction is confirmed, the curare effect should be antagonized immediately by the intravenous injection of 1 cc. of neostigmine methylsulfate, 1:2,000 combined with 0.6 mg. of atropine sulfate. The former drug should always be on hand to combat respiratory failure during the use of curare.

Solutions of *d*-tubocurarine chloride used in conjunction with pentothal sodium intravenous anesthesia may be admixed with a solution of pentothal sodium for simultaneous administration of both agents. Solutions of *d*-tubocurarine chloride are available in concentrations of 3 mg. (20 units) per cubic centimeter and 15 mg. (100 units) per cubic centimeter. The acidity of these solutions causes only momentary precipitation of curare-barbiturate mixtures when added in amounts to avoid undue dilution of the pentothal sodium solution: limit for solution *d*-tubocurarine of 3 mg. (20 units) per cc., is 7.5 units per 25 mg. pentothal sodium in 1 cc.; for solution *d*-tubocurarine of 15 mg. (100 units) per cc., 10 units per 25 mg. pentothal sodium in 1 cc. Optimal results for most operative procedures have been obtained by using 5 units of the higher potency *d*-tubocurarine solution per each 1 cc. of a 2.5 per cent solution of pentothal sodium. This mixture is made up by adding 1 cc. of high potency (100 units per cc.) solution of *d*-tubocurarine chloride to 19 cc. of 2.5 per cent solution of pentothal sodium and when so made from the high potency *d*-tubocurarine chloride solution will keep for about 10 days. It is administered in the same manner as pentothal sodium alone, with slow induction, 1 or 2 cc. at a time. The average total dose of the mixture varies from 15 to 20 cc. Other ratios and technics may be worked out to advantage in individual cases. *The high potency solution of d-tubocurarine chloride, 15 mg. (100 units) per cc., should never be injected without dilution because of the danger of overdosage by too rapid administration.* *d*-Tubocurarine chloride-barbiturate combination anesthesia is contraindicated in patients with respiratory deficiencies, pulmonary disorders, renal dysfunction, liver disease and myasthenia gravis.

Tests and Standards.—

d-Tubocurarine chloride occurs as a colorless or yellowish-white to gray or light brown, odorless, crystalline powder. It is soluble in water, slightly soluble in alcohol, and practically insoluble in chloroform and ether. When previously dried at 100° C. for 4 hours, it melts with decomposition somewhere between 265° and 278° C. provided the melting point tube is placed in a bath preheated to 260° C.

Prepare a stock solution of 0.1 Gm. of *d*-tubocurarine chloride in 10 cc. of water: it is colorless or yellowish and free of insoluble material. Dilute 1 cc. of the stock solution to 100 cc. with water and to 2 cc. of this solution add 3 cc. of Folin-Ciocalteu phenol reagent (*Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists,* ed. 6, p. 319), previously diluted (1:3) with water, and adjust the volume to 25 cc. with water. Add 2 cc. of 20 per cent sodium carbonate solution, mix, and heat the mixture for 3 minutes in a boiling water bath: a brilliant blue color develops.

Dilute 0.5 cc. of the stock solution with 10 cc. of water, add 0.2 cc. of sulfuric acid and 2 cc. of a 1 per cent potassium iodate solution, mix thoroughly and warm in a water bath for 30 minutes: a yellow color develops.

To 1 cc. of the stock solution add 1 cc. of a 4 per cent Reinecke's salt solution: a pink precipitate results. To 1 cc. of the solution add 1 cc. of saturated picric acid solution: a yellow precipitate results. To 1 cc. of the stock solution add 1 cc. of silver nitrate T.S.: a white precipitate forms, soluble in ammonia T.S.

Dry about 0.1 Gm. of *d*-tubocurarine chloride, accurately weighed, in a tared weighing bottle at 100° C. for 4 hours: the loss in weight does not exceed 11.5 per cent.

Transfer 0.2 Gm. of *d*-tubocurarine chloride, accurately weighed, to a separatory funnel containing 200 cc. of water. Add 5 cc. of saturated sodium bicarbonate solution and extract with three 20 cc. portions of chloroform. Wash the combined chloroform extracts with 10 cc. of water, filter through a pledget of cotton into a tared beaker, evaporate and dry at 100° C. for 1 hour: the weight of the residue does not exceed 3 per cent calculated on the dry basis. The residue is insoluble in water, but soluble in diluted hydrochloric acid.

Transfer about 0.15 Gm. of *d*-tubocurarine chloride, accurately weighed, to a 100 cc. Erlenmeyer flask and add 10 cc. of water, 5 cc. of diluted nitric acid and exactly 25 cc. of fiftieth-normal silver nitrate. Add 5 cc. of nitrobenzene and swirl the contents of the flask to entrap the precipitate. Add 2 cc. of ferric ammonium sulfate T.S. and titrate the excess silver nitrate with fiftieth-normal ammonium thiocyanate. Each cc. of fiftieth-normal silver nitrate is equivalent to 0.000709 Gm. of chlorine: the chlorine content found is not less than 9.5 nor more than 10.2 per cent, calculated to the dried substance.

Transfer about 0.1 Gm. of *d*-tubocurarine chloride, accurately weighed, to a 10 cc. calibrated flask, dissolve the salt and make up to volume with water. Let the solution stand for 3 hours and determine the optical rotation in a 100 mm. polarimeter tube: the specific rotation, $[\alpha]^{25}_{D}$, calculated from the observed rotation and the concentration (expressed in grams of dried *d*-tubocurarine chloride per 100 cc. of solution) is not less than + 208 degrees nor more than + 217 degrees. (The most probable value of the specific rotation for pure anhydrous *d*-tubocurarine chloride is + 215°.)

The potency of *d*-tubocurarine chloride is determined by observation of the "head-drop" response following intravenous injection of the drug in rabbits. (For assay methods see H. A. Holaday, U. S. Patent 2,397,417; R. F. Varney, C. R. Linegar and H. A. Holaday, *Federation Proc.*, **7**, Part 1: 261 (March) 1948; and G. M. Everett, *J. Pharmacol. & Exper. Therap.* **92**: 236 (March) 1948.)

Abbott Laboratories, North Chicago, Ill.

Solution *d*-Tubocurarine Chloride: 3 mg. per cc., 10 cc. vials. Preserved with benzyl alcohol 0.9 per cent.

E. R. Squibb & Sons, New York

Solution *d*-Tubocurarine Chloride: 3 mg. (20 units) per cc., 10 cc. vials.

Solution *d*-Tubocurarine Chloride (High Potency): 15 mg. (100 units) per cc., 1 cc. ampuls.

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SATURDAY, NOVEMBER 13, 1948

THE D. P. DOCTOR

Recently the press, at least in the Midwest, has been agitated by the fact that a Wisconsin community arranged for the arrival and entrance into practice of a physician from abroad who had lost contact with his motherland, and then discovered that he could not qualify for licensure. Several newspapers wanted to make an issue of the situation. Reporters exhibited great distress when they discovered that a doctor cannot practice medicine in the United States without a license from the state in which he wishes to practice. The laws regulating medical licensure were not adopted for the protection of the medical profession but for the protection of the American people against unqualified and incompetent doctors. The laws of the various states differ. Some states require full citizenship; others require first papers; some require a year of internship in a hospital within the state; many of them demand fully accredited credentials which physicians from foreign countries frequently do not have.

The medical schools of many of the foreign countries have been in a deplorable state since the beginning of the Nazi invasions. The medical schools of Germany are today in a deplorable state, as are those of many other European countries. Recently Dr. Irving S. Wright[1] reported on a study of the schools of Europe. One of the chief difficulties has been the attempt of the schools to take on more students than they could teach properly, since they suffer from a lack of teaching personnel and equipment. The Editor of THE JOURNAL visited the displaced persons camp at Altersheim in a recent trip to Europe and while there conferred with a mission which was endeavoring to bring the D. P. physicians up to date in medical matters. One must realize that Europe was completely shut off from scientific information developing elsewhere in the world during at least the years 1939 to 1944. Foreign doctors knew nothing whatever of the development of antibiotic drugs, of new methods of anesthesia and of many other new medical technics which had been developed elsewhere. Estimates indicate that there are about 2,000 physicians in D. P. camps. It is unlikely that more than a few of these will eventually come to the United States. Many of them will accompany the people with whom they fled from their own countries. Most of them had such a difficult time keeping alive during their flight that they had little opportunity to keep abreast of medical knowledge. The younger physicians graduated from medical schools which have had a serious time trying to survive since 1933.

The International Refugee Organization established in 1948 a special board to register the medical credentials of displaced and refugee physicians and other medical personnel. The International Refugee Organization is issuing to each person registered a certificate stating the particulars of his medical qualifications. They report that there are now in the United States zone of Germany 1,461 registered refugee physicians, of whom 901 are general practitioners. These physicians come from all of the countries of Europe, and they represent a great variety of religious groups. The majority are Catholic, and about 300 are Jewish. It should be remembered that the majority of the Jewish physicians went to the German concentration camps and were destroyed either by gas or by some other technic commonly referred to in connection with Russian activities as being "liquidated."

The difficulties which confront a foreign physician in securing opportunity to practice in the United States are far less rigorous than those confronting physicians from the United States who might wish to practice abroad. There are few physicians from the United States practicing in Great Britain, and the difficulties in France are even greater. The Latin American countries practically forbid practice by a physician from the United States, making the conditions so severe that few physicians from the United States would wish to attempt to qualify. The methods of medical education that prevail in most other countries are quite different from those in the United States.

The state medical licensing boards have considered the cases of D. P. physicians with the utmost sympathy and liberality. Many of them have been given opportunity to take examinations three, four or more times, and in one instance a physician took the examination ten times before he finally passed. He had spent the intervening time in study and was thereby a better physician.

Ultimately, under the auspices of the World Medical Association or of the United Nations, some conference may be held to consider the varying qualifications demanded of a physician in different countries with a view toward greater standardization of medical education and licensure.

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[1] Wright, I. S.: Medical Education in Germany and Austria, J. A. M. A. **137**:5 (May 1) 1948.

CANCER OF THE LUNG IN CHROMATE WORKERS

The alarming rise in the incidence of cancer of the lung during the last three decades in many countries advanced death from this tumor into second place on the cancer-mortality list for males. The majority of investigators found that occupational factors did not play any demonstrable part in pulmonary cancers and could not account for the increase. However, such conclusions were drawn as a rule from the data in patients' histories, and were, therefore, of little scientific value. Specific occupational exposures responsible for industrial cancers are usually sustained some three to thirty years previous to the manifestation of the cancer and for this reason usually appear to be without relation to the occupational information of the general type recorded in patients' histories and death certificates. The recent report by Machle and Gregorius [1] on cancer of the lung among workers in seven American chromate plants provides definite evidence of the occupational origin of these tumors. The epidemiologic study of deaths from pulmonary cancer among workers in the major factories of chromates showed that in a total of 193 deaths from all causes there were 66 deaths from cancer of all sites and 42 deaths from pulmonary cancer (21.8 per cent of all deaths). In addition to an excessive total cancer death rate in this occupational group, the pulmonary cancer ratio was 16 times the expected ratio of 1.3 per cent. The individual ratios of pulmonary cancer in the various plants ranged from 13 to 31 times the normal, while the crude death rate for this type of tumor was 25 times the normal, the range of excess for the different plants being from eighteen to fifty fold. This evidence confirms previous reports from German chromate factories [2] and implicates chromates as carcinogenic agents. Although Machle and Gregorious stated that, according to their observations, chromic acid and basic chromium sulfate are apparently noncarcinogenic, a fact of considerable importance from the point of view of hazard to users of bichromates and chromic acid, this claim lacks adequate proof from thorough investigation of industries and workshops handling these chemicals. In present circumstances these chemicals must be considered as potentially carcinogenic.

Other occupational activities also carry an increased liability to cancer of the lungs and nasal sinuses. The inhalation of hot tar fumes by stokers in generator plants, of radioactive dust and gases by miners handling radioactive ores and of asbestos dust in various asbestos industries has resulted in an excessive incidence of pulmonary cancer among members of these occupations, while workers of nickel-copper refineries have a special liability to cancer of the nasal sinuses and of the lungs. Doubtless, other industrially important agents possess similar properties, although this fact has not yet been recognized or recorded. Fluctuations of the incidence of pulmonary cancer between different regions and during various periods probably are in part attributable to differences in the quantitative and qualitative aspects of the environmental carcinogenic spectrum. A fuller knowledge of the epidemiology and etiology of cancer of the respiratory organs depends on a more extensive and thorough analysis of the occupational activities and other environmental factors of patients with cancer of the lung.

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[1] Machle, W., and Gregorius, F.: Cancer of the Respiratory System in the United States Chromate-Producing Industry, Pub. Health Rep. 63: 1114, 1948.

[2] Hueper, W. C.: Occupational Tumors and Allied Diseases, Springfield, Ill., Charles C Thomas, Publisher, 1942.

TUBERCULIN ALLERGY

In 1942 Landsteiner [1] challenged conventional theories of anaphylaxis by demonstration that acquired skin sensitivity to simple chemical compounds is not dependent on circulating antibodies. Such sensitivity was apparently due to specific acquired biologic deficiencies or abnormalities of tissue cells. Guinea pigs were rendered specifically hypersensitive to picryl chloride by injection of picryl chloride–stroma conjugates. When a drop of an oil solution of picryl chloride was subsequently put on the skin, intense erythematous reactions were noted. A passive transfer of this skin sensitivity was impossible by serum transfer but was found possible by intraperitoneal or intravenous injection of peritoneal exudate. The transfer was not due to the clarified fluid in this exudate, but to its cellular elements. Similar cytologic transfer of acquired skin sensitivity was subsequently demonstrated with other simple chemical compounds.

Clinical interest in the Landsteiner cytogenic allergy was increased by the subsequent demonstration that the same type of cellular transfer is possible in hypersensitivity to tuberculin. Chase,[2] of the Rockefeller Institute, rendered albino guinea pigs hypersensitive to tuberculin by subcutaneous injections with heat-killed human tubercle bacilli suspended in liquid petrolatum. Between five and nine weeks later the cutaneous reactivity to tuberculin was pronounced. Exudates were induced in these animals by an intraperitoneal injection of 28 cc. of liquid petrolatum. Forty-eight hours later the peritoneal cavities were washed out with heparized Tyrode solution containing gelatin or normal guinea pig serum.

The washings were combined and cells recovered from the aqueous layer by minimal centrifugation. The sedimented cells were repeatedly washed with Tyrode's solution plus a tenth volume of normal guinea pig serum. The yield of cells amounted to 0.1 to 0.15 cc. per donor. The sediment was composed of 15 to 30 per cent polymorphonuclear leukocytes, 20 to 35 per cent lymphocytes and 50 to 65 per cent large mononuclear cells.

The combined cells from 2 to 10 donors were immediately injected intraperitoneally or intravenously into normal albino guinea pigs. The animals were then given periodic skin tests with old tuberculin. After a latent period of two to three days following intraperitoneal injection, or twenty to thirty-six hours after intravenous injection, tuberculin skin reactions were noted. The sensitivity increased to a maximum by the end of seventy-two to ninety-six hours, at which time the routine skin test led to a diffuse indurated reaction about 16 mm. in diameter with a white center 9 mm. in diameter and a 4 mm. brownish necrotic central zone. After the fifth day, control animals exhibited active sensitization to the tuberculin preparation used in the periodic tests, largely a sensitivity to the broth medium. The tests were discontinued at this time.

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[1] Landsteiner, K., and Chase, M. W.: Proc. Soc. Exper. Biol. & Med. 59: 688, 1942.

[2] Chase, M. W.: Proc. Soc. Exper. Biol. & Med. 59: 134, 1945.

In addition to the exudate cells from the peritoneal cavity, cells from the spleen or lymph nodes were found capable of transferring tuberculin hypersensitivity. The cells become largely or entirely inactive on being heated to 48 C. for fifteen minutes, or after twenty-four hours' storage in the ice box.

This reported cytologic transfer of tuberculin hypersensitivity has been adequately confirmed by Cummings[3] and his associates, and studied in greater detail by Stravitsky[4] of the California Institue of Technology. Stravitsky found that a similar transfer of acquired tuberculin hypersensitivity was possible by a massive transfer of whole blood from tuberculous guinea pigs. He expressed the opinion that circulating lymphocytes in this whole blood were responsible for this transfer. Attempts to transfer sensitivity by means of various crude extracts of tuberculous lymphocytes, peritoneal exudates, lymph nodes or spleen, however, gave negative results.

It has been shown by Moen,[5] Favour[6] and others that lymphocytes from tuberculous mice and guinea pigs are rapidly lysed (or autolysed) on contact with a small amount of tuberculin. That the same type of lysis (or autolysis) is demonstrable with human leukocytes was subsequently shown by Fremont-Smith[7] of Harvard Medical School. White cells were obtained by fractional centrifugation of heparized human blood. Experiments were performed on the leukocytes from three groups of subjects: (*a*) tuberculin-positive patients with bacteriologically proved active, severe tuberculosis, (*b*) subjects with positive skin reactions but no demonstrable clinical tuberculosis and (*c*) healthy persons with negative tuberculin skin reactions.

Cytolysis was demonstrated by adding 0.2 cc. of the white cell suspension (7,000 to 15,000 per cubic centimeter) in fresh human serum to 0.2 cc. of fresh normal human serum containing 25 micrograms of tuberculoprotein per cubic centimeter. The resulting mixture was immediately immersed in a water bath at 37 C. Total and differential cell counts were made at stated intervals. These counts showed that with leukocytes from patients with active severe tuberculosis there was as much as a 60 per cent specific destruction of the lymphocytes and a 90 per cent destruction of neutrophil leukocytes by the end of ninety minutes.

Control tests with white cells from healthy tuberculin-positive or tuberculin-negative subjects elicited negative reactions. Parellel tests with leukocytes suspended in heated normal human serum were also negative in result. This was interpreted by the Harvard investigator as evidence that serum complement plays a role in tuberculin cytolysis. The mechanism of this lysis and of the cytogenic transfer of tuberculin hypersensitivity was otherwise not determined.

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[3] Cummings, M. M.; Hoyt, M., and Gottshall, R. Y.: Pub. Health Rep. **62**: 994, 1947.

[4] Stravitsky, A. B.: Proc. Soc Exper. Biol. & Med. **67**: 225, 1948.

[5] Moen, J. K., and Swift, H. K.: J. Exper. Med. **64**: 339, 1936.

[6] Favour, C. B.: Proc. Soc. Exper. Biol. & Med. **65**: 269, 1947.

[7] Fremont-Smith, P., and Favour, C. B.: Proc. Soc. Exper. Biol. & Med. **67**: 502 (April) 1948.

Current Comment

THE OREGON AND SAN DIEGO SUITS

Elsewhere in this issue appear the complaints against the medical societies of Oregon and of San Diego, California, which explains the reasons alleged for undertaking these actions. Apparently the basic question is again the right of a medical society to refuse membership to a physician whom it does not find acceptable, the right of a medical society to oppose any group of physicians organized to practice as an agency rather than as individuals, and the right of a hospital to bar from its staff persons whom it finds unacceptable either because they are not members of a medical society or for some other reason. THE JOURNAL has been publishing recently a series of articles which deal with the formation of groups and the practice of medicine by groups of physicians. The idea of group practice is not new. More recently, however, the development of groups has been associated with solicitation of patients by a variety of technics and also with the establishment of insurance ventures of one kind or another to cover payment for medical services. As yet a standard form has not been developed for practice of this kind. It is not surprising that there should be differences of opinion among physicians in any given area as to whether such forms of medical practice represent technics that are for the good of the patient or for his exploitation. Unfortunately these actions seem to be related to political ventures in the field of health, such as Mr. Ewing's recent insistence on a nationwide compulsory sickness insurance program and Mr. Truman's advocacy of the same legislation. The medical profession of the United States has shown in no uncertain terms its opposition to government-controlled medical practice and equally its opposition to medical practice as a business. Some of the cooperative ventures in public health thrive by exploitation of the physician and by the delivery of a low quality of medical service. No doubt these cooperative ventures have likewise been interested in breaking the prestige of the medical organizations in various communities so that they might proceed quite unhampered in their activities. In any event, now that the matter has been brought into the courts, a better understanding of the difficulties will ensue.

ORGANIZATION SECTION

COMPLAINTS FILED AGAINST TWO MEDICAL SOCIETIES

Prepared by the

Bureau of Legal Medicine and Legislation, American Medical Association

There follow condensations of the complaints recently filed, respectively, against the Oregon State Medical Society, and others, under the Sherman Anti-Trust Act, and against the San Diego County Medical Society, and others, under the laws of the State of California.

United States of America, Plaintiff v. Oregon State Medical Society, Oregon Physicians' Service, Clackamas County Medical Society, Clatsop County Medical Society, Columbia County Medical Society, Douglas County Medical Society, Jackson County Medical Society, Lane County Medical Society, Marion-Polk Counties Medical Society, The Multnomah Medical Society, W. W. Baum, John Besson, J. P. Brennan, John H. Fitzgibbon, Charles E. Hunt, Gordon B. Leitch, K. H. Martzloff, and E. H. McLean, Defendants.

Filed in the District Court of the United States for the District of Oregon, Oct. 18, 1948.

The complaint charges that beginning on or about Jan. 1, 1936, the defendants have been engaged in a combination and conspiracy to restrain and monopolize interstate trade and commerce in the business of selling and furnishing prepaid medical care in Oregon and in other states, in violation of Sections 1 and 2 of the Sherman Anti-Trust Act.

The conspiracy, the complaint alleges, has consisted of a continuing agreement and concert of action among the defendants: (1) to monopolize prepaid medical care business in Oregon and between that state and other states; (2) to limit the scope of medical care to be provided by prepaid medical care plans in Oregon; (3) to prevent, hinder and obstruct prepaid medical care organizations other than those sponsored by the defendants from continuing to engage in or from engaging in the business of selling and furnishing prepaid medical care in Oregon and in other states; (4) to restrain residents of Oregon and other states from entering into or continuing under prepaid medical care plans not sponsored or supported by the defendants; (5) to prevent physicians from cooperating in prepaid medical care plans not sponsored or approved by the defendants; (6) to restrict the use of hospital facilities by physicians cooperating in prepaid medical care plans other than those sponsored or approved by the defendants, and (7) to prevent Oregon hospitals from allowing their facilities to be used by physicians and patients associated with prepaid medical care plans other than those sponsored or approved by the defendants.

The combination and conspiracy alleged, the complaint continues, have been effectuated by the defendants in the following specific manner: (1) they have hindered and obstructed prepaid medical care organizations in their attempts to procure and retain qualified physicians to cooperate with them; (2) they have expelled, threatened and incited the expulsion from medical societies of physicians cooperating in prepaid medical care plans other than those sponsored or approved by the defendants; (3) they have formed and promoted their own prepaid medical care plans with the intent to drive out, hinder and obstruct other commercial medical care plans operating in Oregon; (4) they have interfered with commercial prepaid medical care organizations other than those sponsored or approved by them in obtaining hospital facilities for their members; (5) they have refused to treat patients and have caused others to refuse to treat patients who are members of a prepaid medical care plan not endorsed by defendants unless the patient pays cash; (6) they have refused and encouraged other physicians to refuse to give patients who are members of a prepaid medical care plan not endorsed by the defendants itemized statements that will enable the patient to be reimbursed under the plan to which he has subscribed; (7) they have refused to consult or assist and have encouraged others not to consult or assist physicians who treat members of a prepaid medical care plan not endorsed by them; (8) they have spread false propaganda for the purpose of discrediting any prepaid medical care plan not endorsed by them; (9) they have agreed among themselves and with others not to compete with each other for prepaid medical care business or with other similar organizations approved by or affiliated with them, and (10) they have succeeded in making hospital facilities in Oregon available only to members of the defendant Oregon Medical Society and its component county medical societies and have restricted and excluded other qualified physicians cooperating in prepaid medical plans other than those sponsored or approved by the defendants from access to such facilities.

The complaint, after attributing certain effects to the activities alleged to have been engaged in by the defendants, concludes with the prayer: (1) that the combinations and conspiracies alleged be declared to be illegal and violative of the Sherman Anti-Trust Act; (2) that the defendants be perpetually enjoined from further engaging in or carrying out the restraints and conspiracy alleged; (3) that the defendant medical societies be perpetually enjoined from refusing to take into their membership, and from expelling or threatening to expel from their membership any physician because of his cooperation in medical care plans other than those sponsored or approved by the defendants; (4) that defendant medical societies, on application or request therefor by any such physician, shall reinstate as a member in good standing any physician expelled from membership because of his cooperation in a medical care plan other than those sponsored or approved by the defendants; (5) that the defendants be perpetually enjoined from persuading or inducing or attempting to persuade or induce hospitals to discriminate in the use of their facilities against physicians or patients cooperating or associated with medical care plans other than those sponsored or approved by the defendants; (6) that the defendants be perpetually enjoined from persuading or inducing or attempting to persuade or induce physicians not to cooperate in medical care plans other than those sponsored by the defendants; (7) that the defendants be perpetually enjoined from suggesting, advocating or agreeing that physicians should refuse to treat patients who are associated with medical care plans other than those approved or sponsored by the defendants, or to discriminate against such patients with respect to fees charged for medical services, or discriminate against such patients by requiring them to pay cash for medical services or refuse to supply itemized statements to such patients showing the medical services rendered and the fees charged therefor; (8) that defendants be perpetually enjoined from the publication or dissemination of false or disparaging publicity concerning medical care plans other than those sponsored or approved by the defendants; (9) that the defendants be perpetually enjoined from advocating, inducing or agreeing that physicians who are members of defendant medical societies should refuse to consult in the diagnosis, care or treatment of patients of physicians cooperating in medical care plans other than those sponsored or approved by the defendants, or of physicians who are not members of defendant medical societies; (10) that the defendant "medical associations" be perpetually enjoined from refusing to give approval to any medical care plan on the ground that such plan is controlled or sponsored by a commercial organization, or that such plan provides for medical care of patients having incomes above any given amount, or that such plan would compete with one or more other medical care plans approved or sponsored by the defendants; (11) that defendant "medical societies" be required to advise in writing all their component county medical societies, and to publish a statement in *Northwest Medicine*, that it no longer be the policy of such medical societies to do those things which, as alleged, they have combined and conspired to do; (12) that the plaintiff have such other and further relief as the court may deem just and proper, and (13) that the plaintiff recover its costs.

Complete Service Bureau, a nonprofit corporation, George Roy Stevenson, Chester J. Antos, and Robert L. Williams, Plaintiffs v. San Diego County Medical Society, a nonprofit corporation, Robert J. Prentiss, Hiram D. Newton, W. H. Geistweit Jr., William C. Black, Morton N. Carlile, E. Minton Fetter, O. S. Harbaugh, George Hartlye Jr., Ralph L. Hoffman, Wilton M. Lewis, J. D. MacPherson, Robert McIver, Thomas F. O'Connell, D. H. Werden, Francis E. West, Blythe W. Pahl, John Doe Nos. 1 to 20 respectively and inclusively, John Doe Company, a corporation, Richard Roe Company, a corporation, and Peter Woe Company, a corporation, Defendants.

Filed in the Superior Court of the State of California in and for the County of San Diego, Oct. 16, 1948.

The individual plaintiffs in this case are physicians associated with Complete Service Bureau, a nonprofit corporation operating a medical care plan. The individual defendants designated by their true names are members of the San Diego County Medical Society.

The complaint, nineteen pages in length, alleges, as a prelude, that the San Diego County Medical Society, the California Medical Association and the American Medical Association constitute a medical trust which connives to promulgate and enforce interlocking rules and regulations to control the practice of medicine and influence the operation of hospitals in the County of San Diego, Calif., and elsewhere. Additionally it is alleged that since 1937 the San Diego County Medical Society, in pursuance of a conspiracy, has closed its membership to all physicians engaged in service to the members of Complete Service Bureau and that it has sought to visit on such physicians complete business and social ostracism, complete restriction of consultation with society members, complete barring of such physicians and their patients from the major hospitals of San Diego County and to restrict them in the exercise of freedom of speech and freedom of contract.

The San Diego County Medical Society, the complaint continues, in or about the year 1937 expelled from its membership plaintiff Stevenson solely because of his connection with Complete Service Bureau and this action was affirmed by the California Medical Association on appeal. In or about the month of July 1948, it is alleged, the other named individual plaintiffs applied for membership in the society and their applications were rejected. One of the requirements for membership, the complaint states, is that the applicant must be recommended by two active members in good standing but that members have refused to sign the applications of physicians who are affiliated with Complete Service Bureau.

In further pursuance of the conspiracy alleged, the complaint charges that the defendants during the year 1947 and thereafter have attempted to poison the minds of the public against nonmembers by causing to be published and circulated paid advertisements in current editions of the San Diego County Telephone Directory of the Pacific Telephone & Telegraph Co., wherein most of the "member doctors are designated as members of San Diego County Medical Society" and in which appears statements intended falsely to convey to the public that nonmembers are not qualified to practice medicine, do not possess professional qualifications and moral character and do not conform to standards insuring the highest possible quality of service to the public.

Furthermore, it is charged, the defendants during the year 1947 and thereafter, have by word of mouth caused to be circulated by themselves and by society members and by nurses and other employees, and by members of their families, remarks in belittlement and derogation of nonmembers, frequently referring to them as "quacks" and designating their groups as "outfits" and characterizing the prepaid medical plan as a "scheme." The medical alleged trust and the defendants, the complaint continues, endeavor to shield their members from exposure and liability in case of malpractice and members of the San Diego County Medical Society consistently decline to appear as expert witnesses in court actions against other members of the society.

It is the custom of the medical trust and its members, it is charged, to recommend to hospital organizations operating in California a form of by-laws, rules and regulations for medical staff as approved by the American College of Surgeons, which contains an article on membership providing that applicants for membership on the medical staff of such hospitals shall be graduates of an approved medical school, legally licensed to practice in California, *qualified* for membership in the local medical society and practicing in the community or within a reasonable distance of the hospital. The complaint charges that the defendants further in pursuance of a conspiracy has induced the Quintard Hospital Corporation of San Diego to modify this recommended form by limiting members on its staff to members of the San Diego County Medical Society.

By reason of the activity of the defendants, the complaint charges, the Complete Service Bureau has had considerable difficulty in obtaining physicians to function in connection with its medical care plan, although the bureau has advertised for such physicians through various agencies existing throughout the United States and through advertising in periodicals circulated among physicians.

The complaint further charges that the Quintard Hospital Corporation, maintaining a hospital in San Diego, for several years extended staff courtesies to the individual plaintiffs and has accorded to members of Complete Service Bureau admission to the hospital and full hospital services. The hospital named, it is brought out in the complaint, was accepted for registration by the Council on Medical Education and Hospitals of the American Medical Association, June 19, 1948, but that the defendants have persuaded the management of the hospital corporation that in order to comply with the requirements of the American Medical Association and to maintain the recognition already given, it will be necessary to deny privileges to plaintiffs and to members of Complete Service Bureau. A letter was received from the Quintard Hospital Corporation, the complaint continues, advising the plaintiffs that in order to comply with the requirements set forth by the American Medical Association it will be necessary for the hospital to deny privileges to Complete Service Bureau.

The complaint charges that Complete Service Bureau has suffered and will suffer actual damages in the sum of $25,000 and each individual plaintiff damages in like amount. The complaint prays for a judgment for double the amount of actual damages and requests an injunction requiring the defendant San Diego County Medical Society to admit to membership the individual plaintiffs and all other qualified physicians affiliated with them, and to refrain from suspending or expelling them for any affiliation or participation with any prepaid medical group conducting its business in the manner in which Complete Service Bureau has been acting. An injunction is asked against all defendants restraining them from any and all acts intended to and tending to hinder and obstruct Complete Service Bureau in the conduct of its business and to obstruct the individual members of such bureau and physicians serving them in free availability of medical and hospital services in the market. The plaintiffs ask to recover their costs and to have all other proper relief.

Washington Letter

(From a Special Correspondent)

Nov. 7, 1948.

Supreme Court Hears Arguments in Urbeteit and Kordel Cases

Arguments in the Urbeteit and Kordel cases, both of which involve implements for self treatment which the federal government claims to be worthless, were heard by the U. S. Supreme Court October 13-14. Outcome of the 2 cases is expected to depend on the Court's interpretation of the word "accompany"; that is, whether or not the Food and Drug Act was violated in view of the fact that, in many of the interstate shipments of Urbeteit's "sinuothermic" machine and Kordel's drug remedies, the allegedly false and misleading literature describing the products was mailed separately from the merchandise. Government counsel argued that Congress, in passing the Food and Drug Act, did not intend that such descriptive material must be shipped in the same carton as the product for the federal law to be involved. Opposing counsel took a contrary view. How long it will be before the Supreme Court reaches a decision cannot be foretold.

Chlorine Dioxide Likely to Replace Agene® in Flour Milling

Following a conference held recently in Washington, the Food and Drug Administration is working on, and probably will issue within a few weeks, revised standards for manufacture of flour the principal change in which will be substitution of chlorine dioxide for nitrogen trichloride (agene®) as a bleaching agent. Evidence was presented at the conference, attended by representatives of federal law enforcement agencies, the milling and drug industries and scientists familiar with the toxicity of agene,® that the proposed substitute is both safe and practical. Among those who were heard at the conference sponsored by the Food and Drug Administration was Sir Edward Mellanby, who in 1946 demonstrated the injurious effect on dogs of white flour bleached with nitrogen trichloride (See The Journal of Nov. 22, 1947).

Women Physicians to Intern in Naval Hospitals

Its ranks now open to women, the Regular Navy is seeking to fill twenty-five newly created positions for interns in naval hospitals. In addition, twenty dietitians and two physical therapists are needed for the Medical Service Corps, to start with the rank of ensign. Women interns will be commissioned as lieutenants (junior grade) in the Naval Reserve and, on completion of eight months' training, they will be qualified to take the professional examinations for the Regular Navy. Details of another procurement program under which civilian woman physicians may apply directly for the Regular Navy will be announced later.

Scientist Mobilization Committee Formed

A special committee on mobilization of scientific man power has been announced by the National Military Establishment. Chairman of the group, whose first meeting was held in Washington, October 13-14, is Irvin Stewart, president of West Virginia University. Its formation was at the suggestion of Vannevar Bush, retiring chairman of the Research and Development Board.

First Displaced Persons to Arrive in the United States

The first immigrants under the Displaced Persons Act have arrived in this country. Among them there is expected to be a small proportion of physicians, dentists and nurses, according to the Washington offices of the International Refugee Organization. Of 340,000 displaced persons whose occupational skills have been classified, 1,150 men and 458 women are listed as physicians and surgeons. In addition, 43 men and 25 women are classified as pediatricians; 35 men and 17 women as ophthalmologists; 294 men and 462 women as dentists; 21 men and 2,566 women as nurses and nurses' aides; 349 men and 380 women as pharmacists; 300 men and 36 women as veterinarians, and 15 men and 21 women as dietitians. In addition, there are approximately 350 dental technicians and mechanics, 85 medical laboratory technicians, 70 opticians, 300 physical therapists and 60 x-ray technicians. The International Refugee Organization is working with various voluntary agencies to facilitate sponsored entry of professional and subprofessional workers and their admission to practice of their vocations in the various states.

Tri-Service Specialty Board Defers Action on Candidates

In anticipation of final recognition of the American Board of Preventive Medicine and Public Health within the next few months, the Interim Board of Preventive Medicine and Public Health took no action on applications for certification at its meeting October 15. The interim group, representing the Army, the Navy and the U. S. Public Health Service, plans to disband as soon as the newly organized national board, whose trustees met in Chicago last month, achieves formal recognition by the Advisory Council on Medical Specialities. Dr. Ernest L. Stebbins, secretary of the American Board of Preventive Medicine and Public Health and chairman of the interim triservice body, presided over the October 15 meeting.

Advisory Health Council

Recommendations for research grants made by its various study sections were to be laid before the National Advisory Health Council at its meeting October 22 at the National Institutes of Health. This was the final session for two members, whose terms expire at the end of this year. They are Drs. Gordon Fair and Harry Mustard.

Hoover Commission Schedules Hearings for Professional Groups

Representatives of the American Medical, Hospital, Dental and Public Health Associations were scheduled to appear before the Hoover Commission's committee on medical and hospital services October 21-22 to explain their ideas for improving these services as administered by the federal government.

Radioisotope Facilities

The F. H. Martell Co., contractors, has been announced by the U. S. Public Health Service as low bidders for the contract to build a radioisotope facilities building to serve the clinical research hospital and laboratories now under construction at the National Institutes of Health, Bethesda, Md.

Coming Medical Meetings

American Medical Association Interim Session, St. Louis, Municipal Auditorium, Nov. 30-Dec. 3. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Annual Conference of State Secretaries and Editors, St. Louis, Hotel Statler, Nov. 28-29. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

National Medical Public Relations Conference, St. Louis, Hotel Statler, Nov. 27. Mr. Lawrence W. Rember, 535 N. Dearborn St., Chicago 10, Director.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 5-9. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, Secretary.

American Academy of Pediatrics, Atlantic City, Chalfonte-Haddon Hall, Nov. 20-23. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 21-23. Dr. Raymond B. Kepner, 547 W. Jackson Blvd., Chicago 6, Secretary.

American Public Health Association, Boston, Nov. 8-12. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary

American Society of Tropical Medicine, New Orleans, Roosevelt Hotel, Dec. 5-9. Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Maryland, Secretary.

Association for Research in Nervous and Mental Diseases, New York, Waldorf-Astoria Hotel, Dec. 10-11. Dr. Clarence C. Hare, 700 W. 168th St., New York 32, Secretary.

Eastern Section, American Federation for Clinical Research, Philadelphia, Temple University School of Medicine, Dec. 4. Dr. J. Edward Berk, Temple University School of Medicine, Philadelphia, Chairman.

International College of Surgeons, U. S. Chapter, St. Louis, Kiel Auditorium, Nov. 16-19. Mr. Ralph E. Osborne, 1516 Lake Shore Drive, Chicago, Business Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 10-12. Dr. J. Basora Defillo, Box 3866, Santurce, Secretary.

Radiological Society of North America, San Francisco, Dec. 5-10. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, Dallas, Texas, Hotel Adolphus, Dec. 6-7. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 7-9. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, St. Louis, Dec. 2-4. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

JAPANESE RESEARCH IN THE SOCIAL SCIENCES

The Department of the Army's Civil Affairs Division has announced that five American educators are en route to Tokyo, Japan, on ninety day assignments to assist General MacArthur's headquarters in promoting the expansion of Japanese research in the social sciences. The five educators will appraise current social science research and act as a board of consultants to Japanese scholars and scientific organizations in formulating plans for personnel training, long range research projects and organizational programs. The mission will also advise officials in planning future assistance and encouragement to be extended to social science research activities in Japan. Members of the mission are: Glenn T. Trewartha, chairman, department of geography, University of Wisconsin, Madison, Wis.; Luther W. Stalnaker, professor of philosophy, Drake University, Des Moines, Iowa; George K. Brady, professor of English, University of Kentucky, Lexington; Edwin O. Reischauer, associate professor of far eastern languages, Harvard University, Cambridge, Mass., and Charles E. Martin, professor of international law and political science, University of Washington, Seattle.

SENTENCES FOR WAR CRIMES

The Department of the Army has released a recapitulation of sentences involving war crimes defendants in Germany. Of the 1,672 sentences originally imposed, 1,090 were approved on review and 69 were disapproved; there were 256 acquittals and 255 sentences were reduced. Of the 426 death sentences adjudged, 299 were approved; of the 199 life sentences, 139 were approved on review; of 10 thirty year sentences, 6 were approved and the other 4 were reduced; of the 25 year sentences adjudged, 2 were disapproved and the other 19 adjudged were much reduced, and so on with the lesser sentences adjudged. The total number of sentences approved as adjudged was 1,090, the disapproved was 69, the acquittals 256, and the reduced sentences numbered 255.

TRAINING IN CIVILIAN INSTITUTIONS

The Surgeon General's Office announced October 12 that forty more Medical Department officers had been accepted for training in civilian institutions. This training includes internships for the young officers and for others special courses in poliomyelitis and surgery. The list of officers comprised four colonels, two lieutenant colonels, one major and thirty-three first lieutenants.

INSTITUTE OF PATHOLOGY EXHIBITS

The Institute of Pathology presented an exhibit entitled "The General Practitioner in the Atomic Age," at the centennial meeting of the Medical Society of the State of Pennsylvania at Philadelphia October 4-7. The six panel exhibit was planned to bring to the attention of general practitioners clinical conditions and damage to both animate and inanimate objects, a possible plan for management of catastrophies and some recognized methods of treatment.

The institute presented an exhibit at the meeting of the American Society of Clinical Pathologists in Chicago October 10-15, comprising eight panels explaining the activities of the American Registry of Pathology.

NAVY

SPECIAL COURSE FOR RESERVE OFFICERS

A course of instruction in the medical aspects of radioactive isotopes and special weapons will be conducted at the Naval Medical School, Bethesda, Md., from December 6 through December 10. The course is primarily for the benefit of inactive reserve medical officers. The instructors will be outstanding men in their specialties. Inactive reserve medical officers who desire to attend this course should submit a request to the commandant of their local naval district prior to November 15. The facilities available make it necessary to restrict attendance to 200 officers. Sleeping quarters will be available for many of those who wish such accommodations.

NOMINATED FOR POSTGRADUATE INSTRUCTION

The following medical officers were nominated early in October for courses in postgraduate instruction: Lieut. John T. Egan of Jamaica, L. I., N. Y., to a residency in obstetrics and gynecology at the Naval Hospital, St. Albans, N. Y.; Lieutenants (jg) Paul G. Bamberg, M.C.R., of Boston, to a residency in general practice, Naval Hospital, Chelsea, Mass.; Robert C. Kessler, M.C., of Auburn, N. Y., to a residency in general practice, Naval Hospital, Portsmouth, Va., and John H. Young, M.C., of Dayton, Ohio, to a residency in psychiatry at the Naval Hospital, Bethesda, Md.

PERSONALS

The following Medical Reserve Corps officers have reported for their first active duty: Lieutenants Timothy F. Lally of San Francisco; (jg) John E. Aiken of Los Angeles; Louis E. Beckham Jr., of Tuscaloosa, Ala., and Robert R. Gillespy Jr., of Garden City, N. Y.

Capt. James J. Hayes of Brooklyn, and Lieutenants (jg) John S. Graettinger of Ontario, Calif., and Ramon A. Mouton of New Orleans have transferred from the Medical Corps Reserve to the Regular Navy.

Comdr. Thomas E. Cone Jr., M.C.R., of Cranston, R. I., is being recalled to active duty and ordered to postgraduate instruction under the new Navy Graduate Medical Training Program. Capt. Raymond J. Mansfield, M.C.R., of Healdsburg, Calif., and Lieut. (jg) Forrest M. Nelson, M.C.R., of Austin, Texas, have voluntarily been recalled to active duty.

Comdr. George H. Davis, M.C., has been assigned to the Naval Medical Center, Bethesda, Md., as a resident in radiology.

NEW NAVY INTERNS

The Bureau of Medicine and Surgery announced as of October 13 that twenty-five additional medical school graduates have accepted commissions as lieutenants (jg) in the Medical Corps Reserve under the Navy's Medical Intern Training Program for internships in civilian institutions. On the completion of the period of internship they will serve on active duty in the Navy.

LEPROSY CONTROL IN THE PACIFIC ISLANDS

Lieutenant Jack W. Millar, M.C., U.S.N., of Palo Alto, Calif., has volunteered for assignment on Tinian Island in the Pacific to start the first leprosy control effort in the Pacific Trusteeship Territory. The Navy is completing a temporary leprosarium on Tinian Island with facilities for treating 100 patients, natives of the Carolines, Marianas, Marshalls, Palaus and Yap. In all, there are about 50,000 natives on these islands, and, according to the Associated Press, Dr. Millar estimates that the number of lepers among them exceeds 500 and may be as many as 1,000. Tinian Island, which has no native population, is now occupied by a small naval force. Dr. Millar will be assisted in this work by two naval medical corpsmen.

VETERANS ADMINISTRATION

SPECIAL HOMES FOR PARAPLEGICS

The Veterans Administration, Washington, D. C., states that a veteran of war or peacetimes service with a permanent, total, service-connected disability due to a disease or injury of the spinal cord, which results in paralysis of the legs and lower part of the body may qualify for federal aid to acquire a home specially designed for wheel chair living. Eligible veterans will receive a federal grant of not more than 50 per cent of the cost of the home or a maximum of $10,000 with which to buy or build a new home or to remodel an existing home for their requirements. The grant also may be used to pay off the indebtedness on such a special home already acquired by an eligible veteran.

LIFE INSURANCE FOR VETERANS

National Service Life Insurance has been available since Oct. 8, 1940, to persons serving in the armed forces. However, those ordered to temporary active duty for thirty days or less do not qualify by virtue of that service. Veterans are entitled to retain their National Service Life Insurance after discharge, and those who served between Oct. 8, 1940, and Sept. 2, 1945, may (subject to certain health requirements) take out new insurance even though they held none while in service. This group also may increase the amount of their government insurance at any time up to the $10,000 maximum. The premium rates on National Service Life Insurance are low because all administrative costs and expenses resulting from claims traceable to the extra hazards of military or naval service are borne by the government and are paid by separate appropriations. There are no restrictions as to residence, travel, occupation or service in the armed forces. National Service Life Insurance is mutual insurance, and premiums and interest earned from invested funds are carried in a Treasury trust fund. Dividends will be payable as earned and authorized by the Administrator of Veterans Affairs. For a small additional premium, there may be added to any policy a total disability rider which provides monthly payments to the insured while he is totally disabled for six consecutive months or longer. National Service Life Insurance carries no restriction as to designation of beneficiaries. The insured may name any person or firm or his estate or other legal entity to receive the proceeds of his insurance.

CONTRACT FOR HOSPITAL AT SEATTLE

The contract for the construction at Seattle of a 300 bed general medical and surgical hospital for the Veterans Administration has been awarded. The general construction contract was awarded the low bidder for $6,077,320; elevators and dumbwaiters will be installed for an additional $234,319.

PERSONALS

Dr. Roy O. Hawthorne has been promoted to chief medical officer at the veterans hospital in St. Petersburg, Fla.

Dr. Clarence R. Miller has been assigned as manager of the Veterans Administration Hospital at Jackson, Miss., to succeed Dr. J. Ralston Wells, who will be in charge of the Veterans Hospital at Dallas, Texas. Dr. Miller is a veteran of World War I, formerly served in the U. S. Public Health Service, and for many years has been in the Veterans Administration.

PUBLIC HEALTH SERVICE

MICROBIOLOGICAL INSTITUTE

Surgeon General Scheele has appointed Dr. Victor H. Haas director of the new Microbiological Institute which has been established in the National Institutes of Health. The following units of the National Institutes of Health have been assigned to the Microbiological Institute: the Division of Infectious Diseases, the Division of Tropical Diseases and the Biologics Control Laboratory, which, on transfer November 1, will be renamed respectively the Laboratory of Infectious Diseases, the Laboratory of Tropical Diseases and the Laboratory of Biological Control. The Rocky Mountain Laboratory at Hamilton, Mont., which formerly was under the Division of Infectious Diseases, will operate as a separate laboratory under the general supervision of the director of the Microbiological Institute. The institute also will conduct studies on the transmission, control and prevention of infectious diseases and fundamental research on the growth requirements, metabolism and conditions of survival of micro-organisms as related to public health.

Dr. Haas joined the Public Health Service in 1932, the year in which he was graduated from the University of Cincinnati School of Medicine. During the war he was in charge of the disposition of medical forces connected with the construction of the Stilwell Road from India to Burma and China, and for this work was awarded the Legion of Merit. In 1947 he was named chief of the Subdivision of Malaria in the Division of Tropical Diseases, National Institutes of Health.

DETAILED INFORMATION ON CANCER

A survey sponsored by the National Cancer Institute, the Maryland State Health Department and the American Cancer Society will endeavor to obtain detailed information on cancer and an evaluation of the effectiveness of cancer control technics at the local health unit. The survey will be made in Frederick, Hartford, Montgomery and Washington counties in Maryland, in which counties cards have been distributed to physicians and hospitals for reporting the name, location and type of each case of cancer. This information will be kept confidential. A card is also filled out and returned to the county health department for each new patient with cancer, and a case worker will call on the patient and his family. Completed case histories will be correlated with those of other patients with cancer. The survey will evaluate also the adequacy of existing hospital and medical personnel and the effectiveness of nurses in case finding and follow-up.

NATIONAL INSTITUTES OF HEALTH

Surgeon General Scheele has announced the assignment of additional laboratories to the Experimental Biology and Medicine Institute which is a part of the National Institutes of Health. On October 15, the Laboratory of Physical Biology was assigned to the Experimental Biology and Medicine Institute, the designation of the Division of Physiology was changed to Laboratory of Biochemistry and Nutrition, the designation of the Chemistry Laboratory was changed to Chemistry and Chemotherapy, and the designation of the Pathology Laboratory was changed to Pathology and Pharmacology. The Director of the Institute of Experimental Biology and Medicine is Dr. William H. Sebrell.

PERSONALS

Dr. Ralph W. G. Wyckoff of the National Institutes of Health, Bethesda, Md., has gone to Europe to accept an honorary degree from the Faculty of Medicine of the Masaryk University at Brünn, Czechoslovakia, in recognition of his work in the application of physics to biology and medicine.

Dr. Robert J. Anderson has been appointed as medical director and chief of the Tuberculosis Control Division to succeed Dr. Francis J. Weber, who will do postgraduate work at Johns Hopkins University.

Surgeon Charles C. Shepard left for Sweden September 12 for a course of special training in chemical biophysics at Uppsala University under the tutelage of Prof. Arne Tiselius, a widely known investigator in this field. This inaugurates a new policy for additional training of young research officers at the National Institute of Health.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CONNECTICUT

Personal.—Dr. Edward B. Sinclair, New Haven, has been appointed Crippled Children physician in the State Department of Health. A graduate of Yale University School of Medicine in 1935, Dr. Sinclair, after discharge from the army in 1946, was medical consultant for vocational rehabilitation at the Veterans' Administration office, Providence.

The Care of the Patient.—Sponsored by the Connecticut State Medical Society, a Committee for the Improvement of the Care of the Patient was formed at a recent meeting in New Haven. The committee includes Drs. Katherine J. Edgar, Bridgeport; Joseph A. Fiorito, New Haven, and D. Dillon Reidy, Hartford, for the state medical society; Irma Bieheusen, New Haven; Helen M. Cullen and Agnes Ohlson, Hartford, for the State Nurses' Association; William J. Donnelly, Greenwich; Leon H. French, Waterbury; Richard J. Hancock, New London, and Hiram Sibley, New Haven, for the Connecticut Hospital Association.

DISTRICT OF COLUMBIA

Clinical Cancer Research.—Dr. Roy Hertz, assistant professor of medicine at George Washington University School of Medicine, has been named chairman of a committee to develop and direct a joint program of clinical cancer research sponsored by the medical school and the National Cancer Institute. Other members of the committee are Drs. Brian Blades, Thomas M. Brown, Calvin T. Klopp, Thomas M. Peery, J. Keith Cromer and Paul K. Smith, Ph.D. The cooperative program is financed by the National Cancer Institute, the American Cancer Society and private sources. Three initial studies are under way:

1. Endocrine and metabolic aspects of cancer of the breast, prostate, uterus, ovaries and testes.
2. Nutritional aspects of cancer of the gastrointestinal tract. The first study concerns the metabolism of vitamin A.
3. Metabolic aspects of nitrogen mustard therapy in lymphoid diseases. A clinical laboratory for these studies has been established at the new George Washington University Hospital, and a ward will be set up shortly. Further studies, as well as the patients to be admitted, will be determined by the directing committee, with the advice of the tumor board of Warwick Clinic. The National Cancer Institute laboratories at Bethesda, Md., will be available also for studies that require more extensive technical facilities.

GEORGIA

Fifty Years in Practice.—At a meeting of the Council of the Medical Association of Georgia September 22, a proposal was approved to award appropriate certificates and lapel buttons to all reputable physicians of the state who have completed fifty years in the practice of medicine. The responsibility for selecting these physicians was placed on the county medical society. Awards will be presented at the Centennial Session of the association, May 10-13, 1949.

KENTUCKY

Dr. Brown Given Distinguished Service Medal.—The Distinguished Service Medal, awarded annually by the Kentucky Medical Association, was presented to Dr. J. Samuel Brown, Ghent, at the recent annual meeting in Cincinnati. He was nominated by the Tri-County Medical Society for having rendered the most outstanding service not only during the current year but in years past. Dr. Brown has practiced in Carroll County for more than fifty-five years.

LOUISIANA

Graduate Course on Neoplastic Diseases.—A graduate course on neoplastic diseases will be presented in the Hutchinson Memorial Building Auditorium, Tulane University of Louisiana Division of Graduate Medicine, New Orleans, November 15-17, in conjunction with the Orleans Parish unit and the Louisiana State Divisions of the American Cancer Society. A tumor clinic will be held Wednesday afternoon in Miles Amphitheater, Charity Hospital. On the evening of November 15 the first annual lectureship of the Louisiana State Division of the American Cancer Society will be presented by Dr. Vernon David, Chicago, speaking on "The Local Spread of Carcinoma of the Large Bowel and Its Bearing on Prognosis and Treatment," and by Dr. John R. McDonald, Rochester, Minn., speaking on "The Smear Technic as an Aid in the Diagnosis of Malignancy."

MAINE

Rockefeller Gives Land to Laboratory.—Thirty acres of land across the road from the main laboratory unit have been given to the Roscoe B. Jackson Memorial Laboratory at Bar Harbor by John D. Rockefeller Jr. It will be used for a group of units to house visiting scientists who work at the laboratory each summer.

The Lancaster Course in Vision.—The Foundation for Vision has decided to repeat its course in the basic subjects of ophthalmology under the supervision of the Ophthalmological Study Council, which is sponsored by the foundation. The next course will use the facilities of Westbrook Junior College in Portland, Maine. It is to be known as the Lancaster Course in honor of Dr. Walter B. Lancaster, director of the previous courses, who will be succeeded by Dr. Parker Heath, clinical professor of graduate ophthalmology at Harvard Medical School.

MARYLAND

Friedenwald Lecture.—Dr. Frank H. Lahey, Boston, on October 14 gave the third annual Dr. Julius Friedenwald Memorial Lecture at the University of Maryland School of Medicine, Baltimore, on "Gastric Surgery." The Friedenwald Lecture was established at the university in 1941.

Dr. Longmire Goes to California.—Dr. William P. Longmire Jr., associate professor of surgery, Johns Hopkins University School of Medicine, Baltimore, has been appointed professor of surgery in the Medical School, University of California at Los Angeles. Dr. Longmire received his M.D. degree at Johns Hopkins in 1938.

MICHIGAN

Personals.—Dr. Walter J. Wilson Sr. has been made emeritus professor of clinical medicine at Wayne University College of Medicine, Detroit.——Dr. Harold B. Rothbart, instructor in clinical pediatrics, Wayne University College of Medicine, Detroit, has been named president of the Detroit Pediatric Society for the current year.

Public Health Conference.—The annual Michigan Public Health Conference will be held at the Pantlind Hotel, Grand Rapids, December 1-3. Emphasis will be placed on Michigan programs, and a symposium type of session will be featured. After adjournment of the conference on Friday the Michigan School Health Association will meet.

Cancer Institute Affiliates with Wayne University.—The Detroit Institute for Cancer Research has been formally affiliated with the Wayne University College of Medicine, Detroit. Under the plan, appointments to the scientific staff of the institute will be made on recommendation of its scientific director when such recommendations bear the endorsement of the university faculty. The dean of the college will be a member of the executive committee of the board of trustees of the institute, and the scientific director of the institute will be a member of the administrative committee of the college.

MISSOURI

St. Louis' Silver Jubilee Dinner.—St. Louis University School of Medicine at a dinner October 29 at the Missouri Athletic Club honored those who have served twenty-five years or more as instructional officers, giving each one a citation and a replica in silver-plated bronze of the seal of St. Louis University. Father Alphonse Schwitalla, dean, presided. Dr. Alphonse McMahon, associate professor of internal medicine, gave the response for the jubilarians. The dinner address was given by Dr. Morris Fishbein, Chicago, on "Ideals of American Medicine." The jubilarians were: Drs. Franklin H. Albrecht, Leo Bartels, Irving H. Boemer, Ralph L. Cook, Joseph P. Costello, Oswald P. J. Falk, Florent E. Franke, George T. Gafney, William J. Gallagher, John Green, John F. Hardesty, Walter E. Hennerich, Joseph L. Hutton, Vincent L. Jones, Alver H. Kerper, Paul F. Kistner, Ellsworth Kneal, George H. Koenig, Alexander J. Kotkis, Paul Lowenstein, William H. Leudde, Benjamin F. May, Alphonse McMahon, Albert J. Motzel, Charles A. Neumann, Carl A. Powell, Rudolph V. Powell, Hugo Reim, Linus M. Ryan, Harry Sandperl, LeRoy Sante, Robert E. Schlueter, Alfred O. Shaklee, Charles F. Sherwin, Edward C. Spitze, John W. Stewart, Edward A. Dorsy, Ph.D., and Wendell H. Griffith, Ph.D.

MONTANA

Open Medical Research Center.—Montana's first medical research center, established by the Western Foundation for Clinical Research, opened in September in a remodeled wing of a local hospital in Great Falls. The foundation has received a $22,500 grant from the National Institute of Health, which has enabled it to start on its first project. The center will initially study methods of preventing or relieving abnormal accumulation of fluids in heart, blood vessels and kidney disease, under the direction of Dr. Ferdinand R. Schemm, who has been designated by the National Institutes of Health as chief investigator of the project, serving without remuneration. Research and dietetic laboratories and a metabolic unit with rooms for about 12 patients who will be under study make up the center. The Western Foundation, according to John D. Stephenson of Great Falls, secretary-treasurer, was established in the hope that worth while research could be undertaken in the Northwestern section of the United States using qualified local personnel.

NEBRASKA

Dr. Davis to Head Department of Surgery.—Dr. Herbert H. Davis, a member of the department of surgery at the University of Nebraska College of Medicine, Omaha, has been appointed chairman of the department, succeeding Dr. J. Jay Keegan, professor of neurologic surgery, who wished to be relieved of administrative duties. Dr. Davis is a graduate of Johns Hopkins University School of Medicine, Baltimore, 1920, and is one of the founding members of the American Board of Surgery. His father, the late Dr. Bryon B. Davis, was at one time chairman of the department.

NEW MEXICO

State Medical Election.—At the annual meeting of the New Mexico Medical Society, Philip L. Travers, Santa Fe, was installed as president, James W. Hannett, Albuquerque, was chosen president-elect, Harold L. January, Albuquerque, secretary-treasurer and John F. Conway, Clovis, delegate to the American Medical Association, with William R. Lovelace as alternate.

NEW YORK

Medical Advisory Board for Boxing Commission.—To make boxing and wresting less hazardous, New York has enacted a law creating a nine man medical advisory board to the state boxing commission under the chairmanship of Dr. Frank R. Ferlaino, New York. New standards and regulations for examination before and after bouts will be formulated by the advisory board. Dr. Ferlaino reports that in 1946 there were 11 deaths in the ring, in 1947, 9, and as of September 27, 1948, 12. Dr. Ferlaino is a graduate of the John Hopkins Medical School, is an attending physician at the New York Post Graduate Medical School and Hospital, has specialized in the relation of trauma to disease in industry and is consulting physician to the General Motors Corporation.

Laboratory Training for Pathologists.—Pathologists preparing for a career in diagnostic laboratory work in New York State may receive training in a program sponsored by the New York State Department of Health. Experience in pathology, bacteriology, biochemistry and other laboratory fields is afforded in this division and in cooperating institutions in Albany and in New York City. One year appointments are open to physicians with graduate training. The program is approved by the American Board of Pathology. Candidates must be United States citizens and graduates of a medical school approved by the American Medical Association. They need not obtain a license to practice medicine in New York State, but must be eligible to take the examination for license. A stipend is granted to trainees. Inquiries should be directed to the Division of Laboratories and Research, State Department of Health, Albany 1.

New York City

Symposium on Viral Infections.—A symposium on pathogenesis and pathology of viral infections will be held by the section on microbiology of the New York Academy of Medicine on Tuesday evening and Wednesday afternoon and evening of December 14 and 15, with Dr. John G. Kidd as chairman.

Hospital News.—Cornerstone for the new Shirley Joyce Katz Pavilion of the Jewish Sanitarium and Hospital for Chronic Diesases, Brooklyn, was laid September 19 and will be completed next spring. The new building, the fourth on the hospital grounds, will add 350 beds and an entire floor for medical research on poliomyelitis and chronic diseases. Two wings will be devoted to the care of children suffering from poliomyelitis and rheumatic heart conditions.

Transportation Service for Premature Infants.—The departments of hospitals and health of New York City are instituting a free transport service for premature babies. A special ambulance with portable heated incubators and oxygen and staffed by nurses who have been trained in the care of prematurely born infants is provided. Requests for transportation of premature babies are made to the Maternity and Newborn Division, Department of Health, 125 Worth Street, WOrth 2-6900. A similar service has been used successfully for a number of years in Chicago and Baltimore.

Sharp Increase in Tuberculosis.—The New York Tuberculosis and Health Association has reported a 12 per cent increase in the number of new cases of tuberculosis in New York City during the first nine months of 1948. The report showed 6,433 new cases registered with the department of health between January 1 and September 30, an increase of 666 over the same period in 1947. A total of 2,445 deaths from tuberculosis was recorded in the city, which was an increase of 126, or 5 per cent, over the number reported for the similar period of 1947. Increases were noted in every borough but the Bronx, with the highest rate recorded for Manhattan. Of 18,000 known cases of tuberculosis in the city, a total of 7,959 was segregated either in the hospitals within the city or in sanatoriums out of town. The number hospitalized within the city, 5,485, was 11 per cent greater than a year ago on the same date. The number of patients attending tuberculosis clinics, 4,820 on September 30, was 8 per cent more than a year ago, and the number under the care of private physicians, 3,965, showed a decrease of 6 per cent. The tuberculosis death rate for the first nine months of 1948 was 40.4 per 100,000 population as contrasted with the rate of 38.9 for the same period last year. In Manhattan the rate increase was double that recorded for the city as a whole.

OHIO

Personal—Dr. Richard L. Meiling, assistant professor of obstetrics and gynecology at Ohio State University College of Medicine, Columbus, has been named a medical consultant to the committee studying the organization of the U. S. security program for the Hoover Commission. Dr. Meiling aided in planning the Army's medical air evacuation program during World War II.

Dr. Toomey on Leave of Absence.—Dr. John A. Toomey, Cleveland, has left his duties as director of the contagious department at the City Hospital and professor of clinical pediatrics and contagious diseases at Western Reserve University School of Medicine for a sabbatical leave to rest and do private practice in Miami. He is replaced by Dr. Morris Schaeffer, who is acting director of the contagious department and assistant professor of pediatrics at Western Reserve University.

Dr. Beck Lectures at Navy Medical Center.—At the second of the series of guest lectures sponsored by the Navy Medical Center, Bethesda, Md., Dr. Claude S. Beck, professor of neurosurgery at Western Reserve Medical School, Cleveland, was the guest speaker. His subject was "Revascularization of the Heart for Angina Pectoris and Coronary Artery Thrombosis." These monthly meetings are open to the local medical societies, faculties and students of medical schools and medical officers of the Army, Navy, Public Health Service and Veterans Administration in the vicinity of Washington, D. C.

PENNSYLVANIA

Blair County Adopts Emergency Call Plan.—The Blair County Medical Society has adopted an emergency call plan which provides for two alternate physicians for each doctor listed at the physicians' exchange. The plan is for emergency purposes only.

Philadelphia

Dedicate Fels Research Institute.—The Samuel S. Fels Research Institute of Temple University School of Medicine was dedicated October 22-23. A symposium on recent advances in gastric physiology was held Friday afternoon. The principal address at the dedicatory exercises was delivered by Edwin G. Conklin LL.D., Princeton, N. J., after which Mr. Samuel S. Fels spoke on the purposes of the institute, of which Dr. Harry Shay is the director.

Television in Teaching Surgery.—The University of Pennsylvania School of Medicine will install television facilities for visual education of medical students in its Philadelphia Medical Center, according to the *Chicago Daily News*. Dr. Robin C. Buerki, vice president in charge of medical affairs, said that medical students will study surgery from a video screen in the same room in which they study other subjects, permitting elimination of students' galleries in operating rooms and the saving of valuable space.

TENNESSEE

Professor Wallgren to Lecture.—Dr. Arvid J. Wallgren, Stockholm, Sweden, will arrive in the United States about March 1, 1949 to deliver the next Abraham Flexner lectures at the Vanderbilt University School of Medicine, Nashville. Dr. Wallgren has been associate professor of internal medicine at Upsala University and head of pediatrics at the Royal Caroline Medical Institute since 1942. This lectureship is awarded every two years to a scientist of outstanding attainment who shall spend as much as two months in residence in association with a department either of a fundamental science or of a clinical branch.

VIRGINIA

Appointed to State Health Department.—Dr. Albert S. McCown, Seattle, has been appointed director of the Bureau of Communicable Disease Control of the Virginia Department of Health, Richmond. Dr. McCown received his M.D. degree at Johns Hopkins University School of Medicine, Baltimore, 1918. He has served in the Washington State Health Department, the U. S. Children's Bureau in Washington, and has been director of medical and health service of the American Red Cross since 1940. During the late war he was a colonel in the medical reserve corps of the Army.

Establish Two Annual Lectures.—The executive committee and the medical staff of the Memorial Hospital, Winchester, have established two annual lectures in connection with the regular monthly staff conferences. The Frank N. Hack lecture will be given by Dr. Alfred Blalock, Baltimore, on "Surgical Treatment of Congenital Cardiovascular Defects," November 17 at the hospital. Dr. Hack of Winchester has greatly aided in the construction and maintenance of the newer portions of the hospital. The Hunter H. McGuire lecture will be given by Dr. Irving S. Wright, New York, on "The Use and Abuse of Anticoagulant Therapy in the Treatment of Thromboembolic Diseases." Dr. McGuire has been president of the hospital since its organization in 1901.

WEST VIRGINIA

Personals.—Dr. Arkie B. Bowyer, Charleston, was elected commander of the West Virginia department of the Veterans of Foreign Wars at the annual meeting in June.——Dr. Alexander Witkow, director of the bureau of county health work of the state department of health, has resigned, effective October 1, to accept a similar position at Worcester, Mass.

State Association Favors Establishment of Medical School.—The council of the West Virginia State Medical Association has gone on record as favoring the establishment at Charleston of a four year school of medicine and dentistry of West Virginia University to provide for the graduation annually of fifty doctors and twenty-five dentists. The recently released university budget carries an item of $2,000,000 for a medical school, which the council will ask to be increased by $500,000, the estimated amount needed for adding the dental school. The need for the school has been more apparent this year than ever before, according to the association. There are 436 students taking premedical work and 93 students taking predental work at the university during the fall semester. There were 181 applications for enrolment in the medical school from bona fide residents of the state for the semester beginning September 1948. Only 30 of this number could be accepted. Over 600 applications for enrolment in the medical school are on file from students residing in other states.

WISCONSIN

Lecture on Nutrition in China.—The University of Wisconsin Medical Society will present Dr. H. C. Hou, director of the Institute of Nutrition in Nanking, China, in a lecture on "Nutritional Deficiency Disease Problems in China" November 17 at 4 p. m. in the Memorial Institutes Building, Madison. Dr. Hou, a medical graduate of Pekin University, has done graduate work at McGill University and now is working in the biochemistry department of the University of Wisconsin before returning to China.

Annual Preceptors' Meeting.—The extramural teaching group of preceptors of the University of Wisconsin Medical School, Madison, hold their annual scientific meeting November 19-20. A symposium on "The Human Back and Its Disabilities" will be held in the auditorium of the Service Memorial Institutes Building on November 19. The following day's program includes ward rounds in the Wisconsin General Hospital, departmental conferences and a lecture by Dr. Clinton N. Woolsey, newly appointed Charles Sumner Slichter research professor in neurophysiology.

GENERAL

Society News.—The American Society of Maxillofacial Surgeons, at its annual meeting at Ann Arbor, Mich., September 26-29, elected Dr. Varaztad H. Kazanjian, Boston, president; Dr. Conrad I. Karleen, Minneapolis, vice president; Dr. Casper M. Epsteen, Chicago, secretary, and Dr. Maurice J. Hickey, New York, treasurer.

Survey Finances of Voluntary Hospitals.—The American Hospital Association, at its annual meeting in Atlantic City September 20, announced the formation of fifteen study groups to be known as the Commission of Hospital Finance. A two year study to determine present and future incomes of the voluntary hospitals of the nation will be made. The cost of the study is estimated at $300,000.

Pharmacopoeial Headquarters.—In conformity with instruction and authority of the 1950 Pharmacopoeial Convention, the board of trustees have selected permanent headquarters of the United States Pharmacopoeia at 46 Park Avenue, New York. The new building is within walking distance of Grand Central Station, the Pennsylvania Railroad Station and the Air Lines Terminal on 42nd Street.

Medical Director Appointed.—Dr. George F. Wilkins, Brookline, Mass., became medical director of the New England Telephone and Telegraph Company, Boston, October 1. He had been assistant medical director since 1940 and succeeds Dr. Daniel L. Lynch, retiring after thirty years as the company's first medical director. Dr. Wilkins is a graduate of Harvard Medical School, Boston, 1932, and an assistant in surgery at the Harvard Medical School.

Defective Vision in School Children.—The National Society for the Prevention of Blindness reports that one fifth of all school children have defective vision. The society made a nationwide survey in which questionnaires were submitted to school superintendents and state, county and city officials. Reports were received from twenty-five states. Dr. Franklin M. Foote is executive director of the society. Six hundred schools throughout the country are said to have sight conservation classes.

Railway Surgeons Meeting.—The American Association of Railway Surgeons will hold its national convention, commemorating the sixtieth year of its founding, at the Palmer House, Chicago, November 21-23, under the presidency of Dr. James E. M. Thomson, Lincoln, Neb. Chicago physicians will present a symposium on "Low Back Pain" November 21. There is no registration fee, and all members of the medical profession are invited. At the dinner session Monday evening, Dr. Thomson, will speak on "Recent Observations of Medicine in Central Europe."

Cerebral Palsy Fellowships.—The National Society for Crippled Children and Adults, 11 S. LaSalle St., Chicago 3, will administer a limited number of inservice fellowships for persons specializing in employment problems of victims of cerebral palsy. The fellowships have been made possible by provisions for an annual grant of $5,000 from the Alpha Gamma Delta, international women's college fraternity. Grants will cover expenses including tuition. By surveying public and private counseling and placement agencies, the national society will develop agreements for the training of workers among those agencies about to conduct intensive programs for the physically handicapped.

International Classification of Diseases.—The World Health organization at the end of this year will publish its "Manual of International Classification of Diseases, Injuries and Causes of Death." Since the World Health Organization has no facilities for distributing the manual, the Council on Vital Records and Vital Statistics has agreed to consolidate U. S. orders and distribute the volumes received from the World Health Organization. The price of the first printing of the new classification is $2.50 a set of two volumes, delivered to the purchaser. Orders must be received by December 1 with checks payable to Halbert L. Dunn, M.D., secretary-treasurer, Council on Vital Records and Vital Statistics, % National Office of Vital Statistics, Washington 25, D. C.

Life Insurance Medical Research Grants.—Applications for grants in aid of research on cardiovascular problems to begin in 1949 will be received by the Life Insurance Medical Research Fund up to Jan. 15, 1949. Support is available for physiologic, biochemical and pathologic research which bears on cardiovascular problems, as well as for clinical investigation in this field. Preference is given to fundamental research. About $500,000 will be awarded. Applications for postgraduate fellowships for training in research in 1949-1950 will be received by the fund up to Jan. 1, 1949. An M.D. or Ph.D. degree or the equivalent is required. The annual stipend is $2,500 and $3,500, with larger amounts in special cases. About twelve fellowships will be available. Later in the year the fund will also offer a number of student (predoctoral) research fellowships for 1949-1950. Both grants and fellowships will become available on July 1, 1949. Further information may be secured from the Scientific Director, Life Insurance Medical Research Fund, 2 East 103d Street, New York 29.

Fischbach Residency Foundation.—This organization has awarded residency appointments to Drs. Robert F. Hall, Flint, Mich., resident in orthopedics at the Children's Hospital, Denver; John S. Chambers Jr., Boston, resident in thoracic surgery, University Hospital, Ann Arbor, Mich.; George L. Torassa Jr., San Francisco, resident in urology, Stanford University Hospitals, San Francisco. The foundation was established early in 1947 by Dr. and Mrs. Howard P. Fischbach, of Cincinnati, through the Educational Fund of Delta Tau Delta fraternity to provide assistance to young men of special merit. The awards are outright gifts to help medical men to take advantage of residency appointments without undue hardship. Specific requirements are that residency be performed in a hospital approved by either the American Medical Association or the American College of Surgeons. The grants are made on the recommendation of a committee of three, Drs. Howard P. Fischbach and Victor W. Fischbach, of Cincinnati, and Dr. Ernest E. Irons, Chicago. The Foundation itself at present provides income sufficient for one award. Individual gifts for the current year have made possible the two additional awards.

FOREIGN

Congress of Acupuncture.—The Third International Congress of Acupuncture will be held in Paris, June 3-5, 1949, at the auditorium of the Geographical Association, 184, Boulevard St. Germain, Paris. President of the congress is Dr. R. de la Fuye, 8, avenue Franklin D. Roosevelt, Paris. The courses in Chinese medicine (acupuncture) will be held at the Room for Biotherapy, 5 rue Paul Baruel, Paris XVe, November 16 and all the following Tuesdays at 9 p. m.

Prize for Essay on Tuberculosis.—One hundred guineas will be awarded for the best essay on "The Control of Tuberculosis in a British Colony." The competition is open to doctors in the British Colonial Medical Service who are not of more than ten years' or less than five years' medical standing, of which at least three years were spent overseas. Essays should reach Dr. Harley Williams, National Association for the Prevention of Tuberculosis, London, not later than March 1, 1949.

Greeks Release Medical Hoard.—Vast quantities of vitally needed medical equipment and supplies hoarded in Greek warehouses were released last year at the insistence of the Public Health Division of the American Aid Mission, according to a *Chicago Tribune* Press Service writer, E. R. Noderer. A warehouse in Canea, Crete, released stocks that had remained untouched for four years. Most of the supplies were shipped in by UNRRA and are currently valued at $4,000,000 to $5,000,000.

The French-American Hospital.—The cornerstone for the French-American Hospital, dedicated to the United States 29th Division, was laid in St. Lo, July 18. Building funds included $140,000 raised by private subscription in America. Part of the ceremony was the unveiling of a bust of Major Thomas D. Howie of Staunton, Va., known as "the major of St. Lo," killed in action along with 1,818 men in his division in the battle of the beaches the day before St. Lo fell. One wing of the hospital will be devoted to the care of children and will be paid for out of receipts from the insurance which covered the Friendship Train's supplies destroyed in a Paris fire last February.

Chinese Medical College Moves to Foochow.—Cheeloo University College of Medicine moved from Tsinan to Foochow in August and opened the autumn semester on October 1. Preclinical work will be carried on in the old Theological School Building on Nantai, while the work of the three upper years will be done in the three mission hospitals, Union Hospital (American Methodist and American Board Missions), Christ's Hospital and Tak Ting Hospital (Church Missionary Society, England). Of these, the two former are situated in the city and the latter on Nantai. The cooperation of the staffs of these hospitals and the help and interest of the Foochow community and the Cheeloo alumni have greatly facilitated the setting up of the medical college in its new surroundings.

Deaths in Foreign Countries

Dr. Gustave Roussy, former rector of the University of Paris and dean of the faculty of sciences, noted for his work in neurology, endocrinology and cancer, died in Paris, September 30, aged 73.——**Dr. Charles M. Wenyon,** London, formerly director of the Wellcome Research Institute, which he had served in a consultant capacity since his retirement in 1944, died in London October 24 at the age of 70. The Theobald Smith Gold Medal of the American Academy of Tropical Medicine was once awarded to Dr. Wenyon.

CORRECTIONS

Hepatic Localization of Emetine.—In the Current Comment by this title in The Journal, October 23, page 596, the name of the author whose work is reviewed is Dr. Leo G. Parmer, not Palmer as printed erroneously both in the text of the Current Comment and in the footnote at the bottom of the page.

Chloromycetin.—In the editorial on chloromycetin in The Journal October 9, the following quoted statements appeared in the last paragraph: "According to the daily press even more spectacular therapeutic effects were afterward obtained during an outbreak of epidemic typhus in Bolivia. Details are not yet reported." The work referred to was begun in December 1947 by Drs. Eugene H. Payne and José A. Knaudt, who, together with Dr. Sylvio Palacios, reported their results in *The Journal of Tropical Medicine and Hygiene* of April 1948, previous to which time they reported their results before the Medical Society at La Paz, Bolivia, and before the regional meeting of the American Federation for Clinical Research. Dr. Payne writes that this was the first time this drug was used against human disease.

Dietary Lipids in Tuberculosis.—In the editorial by this title in The Journal of Oct. 2, 1948, page 366, Dubos and Davis's paper *(Journal of Experimental Medicine* **83**:409, 1946) was said to support the following conclusion: "It seemed probable therefore that dietary lipids might exert either beneficial or deleterious effect in clinical cases, depending on the type of lipid used. This conclusion was tested by Dubos and Davis of the Rockefeller Institute, who studied the growth of Mycobacterium tuberculosis in liquid mediums containing a series of fatty acids: They found that capric, lauric, palmitic and myristic acids were inhibitory at dilutions as high as 1:10,000,000. Growth occurred at concentrations as high as 1:100 with stearic, oleic, linoleic or butyric acids."

Dubos and Davis state that this conclusion not only is unsupported by their paper but is in large part directly contradictory to their findings.

Marriages

Nathaniel J. Pulver, Brooklyn, to Miss Shirley Thelma Fivel of Mechanicville, N. Y., at Troy, N. Y., recently.

Norman U. Messiter, Oneida, N. Y., to Miss Betty Cobb of Cassapolis, Mich., at Folkstown, Ga., August 14.

Marshall Henry Williams Jr., New Haven, Conn., to Miss Mary Butler of Fieldston, N. Y., August 27.

Francis Joseph Thomas Crilley Jr., to Miss Edith Louise Rupertus, both of Washington, D. C., August 14.

Joseph B. Watrous Jr., to Miss Katharine Stone Couper, both of Binghamton, N. Y., September 4.

Julius D. Stein, Milford, Conn., to Miss Francine Betty Lebenstein of New York, August 22.

Hyman M. Chernoff, New Haven, Conn., to Miss Sulamith Scharfstein of New York, August 29.

Gennady Platoff, New Rochelle, N. Y., to Miss E. Donya Pogrebniak of Binghamton, recently.

George Gregory Miles, Downsville, N. Y., to Miss Elizabeth Julia Palmer of Walton, August 14.

John R. Harrie, Grey Eagle, Minn., to Miss Jean Christy of Jamestown, N. D., September 2.

Henry H. Fetterman, Allentown, Pa., to Miss Marian Harer of Upper Darby, June 19.

Josef R. Martin to Miss Jeanne Louise McCoy, both of Carroll, Iowa, August 28.

Abraham J. Gorday, Chicago, to Miss Carmel Dunford in Eustis, Fla., August 22.

Alexander J. Kelly Jr., to Miss Mary Ann Hard, both of Brooklyn, August 14.

Eugene Smith to Miss Marvel Holck, both of Waterloo, Iowa, September 3.

Deaths

Philip Kingsnorth Gilman ⊕ San Francisco; born in 1879; Johns Hopkins University School of Medicine, Baltimore, 1905; clinical professor of surgery, emeritus, Stanford University School of Medicine; at one time on the faculty of the University of the Philippines College of Medicine in Manila, where he was on the staff of the Philippine General Hospital; member of the founders group of the American Board of Surgery; past president of the California Medical Association and the San Francisco County Medical Society; member and past president of the Pacific Coast Surgical Association; fellow of the American College of Surgeons; served during World War I; during World War II a captain in the medical corps of the U. S. Naval Reserve, serving as district medical officer of the Twelfth Naval District; chief of the bureau of hospitals, state public health department; died in Stanford University Hospital September 7, aged 69.

Edward Peter Heller ⊕ Kansas City, Mo.; born at Allentown, Pa., on Oct. 30, 1892; Jefferson Medical College of Philadelphia, 1916; member of the American Association of Industrial Physicians and Surgeons, of which he had been vice president; past president and co-founder of the Association of Railway and Industrial Physicians and Surgeons of Kansas City; formerly councilor of the Seventh District of the Missouri State Medical Association; served overseas during World War I; affiliated with Kansas City General and Research hospitals; in 1923 was awarded the Alvarenga Prize by the Philadelphia College of Physicians for his essay entitled "Treatise on Echinococcus Disease"; served as editor and co-editor of the *Jackson County Medical Society Weekly Bulletin;* died in Chadron, Neb., August 19, aged 55, of injuries received in an automobile accident.

William J. Mellinger, Santa Barbara, Calif.; born in 1886; Chicago College of Medicine and Surgery, 1913; served as associate professor of anatomy at the University of Southern California School of Medicine in Los Angeles; specialist certified by the American Board of Otolaryngology; member and formerly vice president of the American Academy of Ophthalmology and Otolaryngology; member of the American Medical Association and the American Laryngological, Rhinological and Otological Society; member and past president of the Pacific Coast Oto-Ophthalmological Society; past president of the Santa Barbara County Medical Society; affiliated with the Santa Barbara Cottage, Santa Barbara General and St. Francis hospitals; died August 28, aged 61, of coronary thrombosis.

Alfred John Murrieta ⊕ Los Angeles; born in Temecula, Calif., Nov. 30, 1876; University of Southern California College of Medicine, Los Angeles, 1899; associate clinical professor of surgery at his alma mater; formerly on the faculty of the College of Medical Evangelists; specialist certified by the American Board of Surgery; member and formerly vice president of the American Proctologic Society; fellow of the American College of Surgeons; president of the Southern California Proctologic Society; affiliated with the Los Angeles County, St. Vincent's and Cedars of Lebanon hospitals and the Hospital of the Good Samaritan; died August 6, aged 71, of cardiovascular disease, following an abdominal operation.

Vera Viola Norton ⊕ Waverly, Iowa; Northwestern University Woman's Medical School, Chicago, 1899; fellow of the American College of Chest Physicians; member of the American Trudeau Society, National Tuberculosis Association and the American Association of University Women; in 1945 the medical library at Dunham Hospital in Cincinnati was named in her honor; on the staff of the Edward Sanatorium in Naperville, Ill., from 1913 to 1917, when she joined the Hamilton County Tuberculosis Sanatorium in Cincinnati, where she retired in 1941 as associate medical director; died in St. Joseph's Mercy Hospital August 11, aged 71, of metastatic carcinoma.

Edward Leland Kellogg ⊛ New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1895; on the faculty of the New York Polyclinic Medical School and Hospital; fellow of the American College of Surgeons; member of the New York Academy of Medicine and the New York Gastro-Enterological Society; served on the staffs of Gouverneur, Manhattan General, St. Bartholomew and Broad Street hospitals; visiting surgeon at the New York Polyclinic Medical School and Hospital, where he died August 11, aged 76, of diabetes mellitus and hepatitis.

Wilfred Eugene Alton, Fort Dodge, Iowa; Chicago Homeopathic Medical College, 1896; died July 10, aged 85.

Cyril Barnert, Westbury, N. Y.; New York University College of Medicine, 1939; member of the American Medical Association; served during World War II; died July 27, aged 32.

Edward Berg, Chicago; Chicago Medical School, 1921; died in September, aged 72.

George Carlton Berkley ⊕ St. Albans, Vt.; University of Vermont College of Medicine, Burlington, 1894; formerly associated with the U. S. Public Health Service; awarded a gold fifty year service pin by the Franklin County Medical Society; died in the Mary Fletcher Hospital in Burlington, September 1, aged 78, of heart disease.

William Francis Bowen, Topeka, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1898; member of the American Medical Association, serving as a member of its House of Delegates in 1934 and 1935; past president of the Kansas Medical Society; fellow of the American College of Surgeons; formerly on the faculty of his alma mater; on the staff of the Christ Hospital; received the honorary degree of master of surgery from Washburn College in 1913; died July 25, aged 76.

Kenneth Warren Buell ⊕ Eaglebridge, N. Y.; Atlanta College of Physicians and Surgeons, 1910; Fordham University School of Medicine, New York, 1914; died August 21, aged 63.

Emmett Duane Carmalt, Pittsburgh; Hahnemann Medical College and Hospital of Philadelphia, 1926; member of the American Medical Association; affiliated with the Shadyside Hospital; died August 24, aged 54, of injuries received in an automobile accident.

William Benjamin Chamberlin, Baton Rouge, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1906; member of the American Medical Association; served in France during World War I; since Aug. 16, 1941 medical director and chief of surgical service at Louisiana State University; affiliated with Our Lady of the Lake Sanitarium and Baton Rouge General Hospital; died July 29, aged 69.

John August Christenson ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; formerly president of the board of directors of the Augustana College in Rock Island; on the staff of the Augustana Hospital; died September 13, aged 76, of bilateral pyelonephritis and uremia.

Frank Emerson Farmer, St. Johnsbury, Vt.; University of Vermont College of Medicine, Burlington, 1899; past president of the Vermont State Medical Society and the Vermont State Board of Medical Registration; member of the American Medical Association; past president of the Northeastern County Medical Society; president and director of the Citizens Savings Bank and Trust Company; died August 8, aged 74, of carcinoma of the lung.

Harry Leland Fifield ⊕ Syracuse, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1906; formerly superintendent of the Onondaga General Hospital; died August 19, aged 67, of cerebral hemorrhage, fracture of hip due to a fall and arteriosclerosis.

Rowland Houghton Ford, Washington, D. C.; Columbian University Medical Department, Washington, 1900; member of the American Medical Association; served during World War I; formerly passed assistant surgeon in the U. S. Public Health Service reserve and assistant health officer of the District of Columbia; died in the Doctors Hospital August 23, aged 73, of coronary heart disease.

Ray Samuel Friedley ⊕ Akron, Ohio; Starling-Ohio Medical College, Columbus, 1911; specialist certified by the American Board of Pediatrics, Inc.; member of the American Academy of Pediatrics; associated with the medical department of the Goodyear Tire & Rubber Company; past president of the Summit County Medical Society; served on the staffs of Children's Hospital and City Hospital, where he died August 1, aged 60, of cardiac decompensation.

Edward Louis Friedman ⊕ Forest Hills, N. Y.; Cornell University Medical College, New York, 1906; died August 9, aged 63, of coronary thrombosis.

Lee Burton Furgerson ⊕ Waterloo, Iowa; State University of Iowa College of Medicine, Iowa City, 1925; died in St. Francis Hospital August 9, aged 49, of cerebral hemorrhage and peritonitis.

Angelo Adam Gallo ⊕ Pottstown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1926; affiliated with Pottstown Hospital, where he died August 14, aged 48, of coronary occlusion.

Clifford Jackson Gay, Jacksonville, Fla.; University of Georgia School of Medicine, Augusta, 1936; member of the American Medical Association; interned at the James M. Jackson Memorial Hospital in Miami; served as a captain in the medical corps, Army of the United States, during World War II; died August 5, aged 43.

Omer Rand Gillett ⊕ Colorado Springs, Colo.; Jefferson Medical College of Philadelphia, 1902; past president of the El Paso County Medical Society; member of the American Public Health Association; city health officer; served during World War I; affiliated with the Glockner Sanatorium and Hospital, St. Francis Hospital and Sanatorium and the Memorial Hospital; died July 9, aged 73.

John Conrad Gross, Phoenicia, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1899; died August 10, aged 70, of cerebral hemorrhage.

Conrad K. Hahn, Racine, Wis.; Medizinische Fakultät der Universität Wien, Austria, 1895; member of the American Medical Association; died in St. Luke's Hospital August 19, aged 79, of arteriosclerotic heart disease.

Maurice Edmund Harwood, Pittsburgh; University of Pittsburgh School of Medicine, 1936; member of the American Medical Association; died July 16, aged 44.

Albert H. Haworth, Troy, Ohio; Starling Medical College, Columbus, 1895; member of the American Medical Association; died July 30, aged 78, of heart disease.

Maurice Edward Healy, Niagara Falls, N. Y.; Loyola University School of Medicine, Chicago, 1937; died July 17, aged 38, of cardiovascular disease and cerebral hemorrhage.

Horace L. Heistand, Springfield, Ohio; Medical College of Ohio, Cincinnati, 1891; member of the American Medical Association; died July 6, aged 82, of uremia and arteriosclerosis.

William Walter Massey Henry, Dover, Del.; Howard University College of Medicine, Washington, D. C., 1909; affiliated with Kent General Hospital; died July 19, aged 66, of carcinoma of the colon.

Horace Bruce Hetrick, Wellsville, Pa.; University of Maryland School of Medicine, Baltimore, 1888; died August 11, aged 81, of arteriosclerosis.

Beeler David Higbee, Grosse Pointe, Mich.; University of Louisville (Ky.) Medical Department, 1908; died August 3, aged 65, of tumor of the lung.

George Jacob Hinn, Highland Park, Ill.; Illinois Medical College, Chicago, 1904; member of the American Medical Association; died in St. Francis Hospital, Evanston, Ill., August 8, aged 75, of coronary thrombosis.

Matthew J. Hoenig, Rochester, N. Y.; University of Buffalo School of Medicine, 1919; member of the American Medical Association; fellow of the International College of Surgeons; on the staffs of St. Mary's and Highland hospitals; died August 5, aged 55, of cerebral hemorrhage.

Archie Solomon Horn ⊕ Rib Lake, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; member of the New Mexico Medical Society; served as health officer of Rib Lake; a captain in the medical corps of the U. S. Army during World War I; died August 22, aged 67, of cerebral vascular accident.

Irwin Wilson Howard ⊕ Aurora, Ill.; Ohio Medical University, Columbus, 1904; died in the Copley Memorial Hospital August 2, aged 69, of arteriosclerotic heart disease.

Charles David Huber, Charlotte, Mich.; Detroit College of Medicine, 1901; member of the American Medical Association; past president of the Eaton County Medical Society; affiliated with the Hayes-Green-Beach County Memorial Hospital; died September 1, aged 71, of heart disease.

Irving Emerson Hunt ⊕ Clarksville, Tenn.; University of Nashville Medical Department, 1907; died July 27, aged 67, of carcinoma of the stomach.

William Butler Hunt, Terre Haute, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1901; member of the American Medical Association; formerly county health officer; died July 31, aged 87, of heart disease.

Orton Charles Hyslop, Spring Valley, Ill.; Northwestern University Medical School, Chicago, 1916; served during World War I; died in People's Hospital, Peru, July 28, aged 56, of coronary thrombosis and hypoadrenalism.

George Hills Iler, Brooklyn; New York Homeopathic Medical College and Hospital, New York, 1890; fellow of the American College of Surgeons; for many years affiliated with Cumberland Hospital; visiting surgeon to the Carson C. Peck Memorial Hospital; died August 11, aged 80, of carcinoma of the bladder.

Matthew William James, Bensenville, Ill.; Reliance Medical College, Chicago, 1911; village health officer; affiliated with the Memorial Hospital, Elmhurst, and the Walther Memorial Hospital in Chicago, where he died August 25, aged 66, of general peritonitis following an operation.

James Morton Jenkins, Cortland, Ind.; Kentucky School of Medicine, Louisville, 1891; member of the American Medical Association; died at Norways Sanatorium, Indianapolis, July 9, aged 83, of coronary thrombosis.

Allen Jones Jervey ⊕ Tryon, N. C.; Medical College of the State of South Carolina, Charleston, 1905; past president of the Polk County Medical Society; served during World War I; affiliated with St. Luke's Hospital, where he died August 25, aged 67, of uremia.

Wilbur Vogt Johnson, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; member of the American College of Chest Physicians; served on the staff of the City of Chicago Municipal Tuberculosis Sanitarium; died in the Belmont Hospital August 29, aged 70, of carcinoma of the stomach.

Jerry M. Jones ⊕ Bay City, Mich.; Michigan College of Medicine and Surgery, Detroit, 1896; chief surgeon for the Detroit Mackinaw Railway; for many years operated the Jones Clinic; medical director of the Bay City Samaritan Hospital; died August 9, aged 77, of heart disease.

Oliver P. Judkins, Indianola, Iowa; College of Physicians and Surgeons, Keokuk, 1895; Rush Medical College, Chicago, 1898; an examiner of the county draft board during World War I; died in Methodist Hospital, Des Moines, August 9, aged 77, of hypertensive cardiovascular disease.

Aquin Sarsfield Kelly ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1900; past president of the New York Ophthalmological Society; specialist certified by the American Board of Ophthalmology; affiliated with Meadowbrook Hospital, Hempstead, St. Joseph Hospital, Far Rockaway, New York Eye and Ear Infirmary and St. Vincent's Hospital; died in the Nassau Hospital, Mineola, July 20, aged 71, of carcinoma of the lung.

John Martin Kinnunen, Meadville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1931; interned at the Mercy Hospital in Pittsburgh; member of the American Medical Association; served in the medical corps, Army of the United States, during World War II; medical inspector for the school district, served as county medical director; affiliated with Meadville City Hospital and Spencer Hospital, where he died July 9, aged 43, of myocarditis.

Wilmer Carroll Kipe, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1905; died recently, aged 69, of coronary heart disease and diabetes mellitus.

Samuel M. Klaristenfeld ⊕ New York; New York Medical College and Flower Hospital, New York, 1930; served during World War II; affiliated with Flower and Metropolitan hospitals; died July 11, aged 43, of pemphigus and heart disease.

Willard Daniel Kline ⊕ Allentown, Pa.; Jefferson Medical College of Philadelphia, 1901; fellow of the American College of Physicians; past president of the Lehigh County Medical Society; for many years affiliated with the Sacred Heart Hospital; died August 9, aged 71, of carcinoma of the larynx, diabetes mellitus and hypertensive cardiovascular disease.

Heilner Maxwell Langdon ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1901; specialist certified by the American Board of Ophthalmology; served as professor of ophthalmology at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; member of the American Ophthalmological Society; affiliated with the University, Children's and Presbyterian hospitals; died in Hampton, N. H., August 28, aged 72, of angina pectoris.

Dwight Milton Lewis ⊕ New Haven, Conn.; Johns Hopkins University School of Medicine, Baltimore, 1901; member of the American Public Health Association; served during World War I; at one time director of rural health in the West Virginia State Department of Health; formerly epidemiologist for the city department of health; died in the New Haven Unit, Grace-New Haven Community Hospital, August 31, aged 73, of coronary occlusion.

James Marshall Lilly, Fayetteville, N. C.; University College of Medicine, Richmond, 1903; member of the American Medical Association; fellow of the American College of Surgeons; served as president of the North Carolina Eye, Ear, Nose and Throat Society; on the staff of the Highsmith Hospital, where he died August 1, aged 70, of sarcoma of the lung.

Richard Mitchell Little ⊕ Surgeon, Lieutenant Commander, U. S. Navy, retired, Dallas, Texas; Columbian University Medical Department, Washington, D. C., 1902; entered the U. S. Navy on Dec. 21, 1920; retired Oct. 1, 1941; died September 3, aged 69, of coronary occlusion.

Finis London, Woodburn, Ky.; University of Tennessee Medical Department, Nashville, 1900; Hospital College of Medicine, Louisville, 1901; member of the American Medical Association; died July 23, aged 74, of hypertension and heart disease

Henry Edmund Lynch, Holyoke, Mass.; Tufts College Medical School, Boston, 1911; served during World War I; on the staff of Providence Hospital; died August 9, aged 61, of coronary thrombosis.

Carroll Edward McCarthy, Clinton, Tenn.; University of Tennessee College of Medicine, Memphis, 1940; member of the American Medical Association; served during World War II; died in St. Mary's Hospital, Knoxville, August 20, aged 29, of heart disease.

Alexander Hancock McChrystal, Salt Lake City; University of Pennsylvania Department of Medicine, Philadelphia, 1901; died August 28, aged 72.

Neil James McColl, Port Huron, Mich.; Medical College of Indiana, Indianapolis, 1898; member of the American Medical Association; formerly mayor of Whittemore and of Croswell; died July 25, aged 71, of cerebral hemorrhage.

Grant McDonald, Detroit; Detroit College of Medicine, 1900; member of the American Medical Association; affiliated with the Florence Crittenton and Children's hospitals; died in the Harper Hospital August 23, aged 78, of carcinoma of the bladder.

James Mahlon McElroy, Alabama City, Ala.; University of the South Medical Department, Sewanee, Tenn., 1901; member of the American Medical Association; died July 21, aged 73.

Harvey Benton McGarrah ⊕ Fairbank, Pa.; Baltimore Medical College, 1893; died in the Uniontown (Pa.) Hospital August 24, aged 82, of arteriosclerosis.

Eben Seton McIntosh ⊕ Burns, Kan.; University of Wooster Medical Department, Cleveland, 1894; died in Newton August 7, aged 81, of bronchopneumonia.

Daniel B. Mark ⊕ Minneapolis; Barnes Medical College, St. Louis, 1909; on the staffs of the Asbury and Eitel hospitals; died in Northwestern Hospital July 4, aged 61, of acute coronary thrombosis.

Charles Wesley Mattison, Temple City, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the American Medical Association; served on the staff of the French Hospital in Los Angeles; died August 26, aged 74, of Parkinson's disease and bronchopneumonia.

Louis Henry Mayer Jr. ⊕ Johnstown, Pa.; Jefferson Medical College of Philadelphia, 1913; past president of the Cambria County Medical Society; served during World War I; consultant on the staffs of the Pennsylvania State Tuberculosis Sanatorium in Cresson and the Municipal Hospital; affiliated with Mercy Hospital and Conemaugh Valley Memorial Hospital, where he died July 10, aged 58.

John Earle Meloy ⊕ Peoria, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; affiliated with Methodist Hospital; died in Grand Rapids, Minn., August 4, aged 77, of arteriosclerosis.

Edgar Benjamin Merwin, Manlius, N. Y.; University of the City of New York Medical Department, New York, 1891; member of the American Medical Association; served as village health officer and school physician; died July 7, aged 82, of coronary thrombosis.

Roy Heape Milligan ⊕ St. Louis; St. Louis University School of Medicine, 1915; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; assistant professor of clinical otolaryngology at his alma mater; affiliated with St. Mary's Group of Hospitals; died in August, aged 58, of heart disease.

Charles Willard Mims, Greenville, S. C.; Medical College of the State of South Carolina, Charleston, 1943; member of the American Medical Association; interned at Greenville General Hospital; died July 24, aged 30.

Walter N. Miner, Calais, Me.; Baltimore Medical College, 1898; member of the American Medical Association; fellow of the American College of Surgeons; served as mayor, alderman, state senator and representative; for many years president of the chamber of commerce; died July 15, aged 76, of angina pectoris.

John Henry Moore, Delaware, Ark. (licensed in Arkansas in 1903); member of the American Medical Association; died July 16, aged 78, of arteriosclerosis and coronary heart disease.

John Henry Moore, Fort Smith, Ark.; Meharry Medical College, Nashville, Tenn., 1898; died July 24, aged 84, of senility.

James W. Morrow, Portland, Ore.; Kansas City (Mo.) Medical College, 1892; died July 4, aged 91, of senility.

Bernard Joseph Mulcahy, Poughkeepsie, N. Y.; University of Vermont College of Medicine, Burlington, 1937; certified by the National Board of Medical Examiners; member of the American Medical Association; served as a flight surgeon overseas during World War II; served a residency at Brooklyn Eye and Ear Hospital; interned at the Vassar Brothers Hospital, where he was a clinical assistant; affiliated with St. Francis Hospital; died August 21, aged 36, of coronary thrombosis.

Raymond William Mullen ⊕ Sioux Falls, S. D.; John A. Creighton Medical College, Omaha, 1902; fellow of the American College of Surgeons; served during World War I; died recently, aged 69, of cerebral hemorrhage.

Eugene Bernhard Munier, Martin, Ky.; National University of Arts and Sciences Medical Department, St. Louis, 1915; served during World War I; died July 21, aged 67, of coronary occlusion.

Zollie Thompson Norman, Philadelphia; University of Texas Medical Branch, Galveston, 1947; interned at the Philadelphia General Hospital; died in Hempstead, Texas, July 5, aged 23, of Hodgkin's disease.

Roy Bartlett Nutter, Tegucigalpa, Honduras, Central America; Tufts College Medical School, Boston, 1908; died August 8, aged 63, of cerebral hemorrhage.

Philip Daniel O'Connor ⊕ Chicago; Loyola University School of Medicine, Chicago, 1925; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; affiliated with the Wesley Memorial Hospital, where he died September 5, aged 51, of portal cirrhosis of the liver and bronchopneumonia.

Thomas Francis O'Loughlin, Rockville, Conn.; New York University Medical College, New York, 1896; member of the American Medical Association; served as health officer for the town of Vernon and medical examiner for the towns of Ellington, Vernon and Tolland; for many years member of the board of education; on the staff of Rockville City Hospital; died August 8, aged 76, of lethargic encephalitis.

Richard Henry Simmons, Shamokin, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; an officer during World War I; for many years county medical director; died July 31, aged 79, of myocarditis and hypertension.

Morgan Smith, Jennings, La.; Vanderbilt University School of Medicine, Nashville, Tenn., 1906; member of the American Medical Association; president of the Jefferson Davis Parish Medical Society; for many years county coroner; died July 11, aged 65, of coronary thrombosis.

Harvey B. Speer ⊕ Coraopolis, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; past president and chief of medical staff of the Sewickley Valley Hospital, Sewickley; died July 30, aged 74, of carcinomatosis.

Eugene Charles Stern ⊕ Cleveland; Georg August-Universität Medizinische Fakultät, Göttingen, Prussia, Germany, 1919; member of the American Academy of Dermatology and Syphilology; on the staff of the Huron Road Hospital, East Cleveland; died July 12, aged 54, of coronary occlusion.

Clifford John Stricker ⊕ Marseilles, Ill.; Northwestern University Medical School, Chicago, 1928; died in Queen of Angels Hospital, Los Angeles, July 24, aged 50, of lymphoblastoma of the mediastinum.

John Clifton Taylor ⊕ New London, Conn.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1891; served on staff of Lawrence Memorial Hospital, where he died July 14, aged 79, of arteriosclerotic heart disease.

Henry Muir Thelen, Vacaville, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1941; interned at the San Francisco Hospital; member of the American Medical Association; died in the Herrick Memorial Hospital, Berkeley, July 27, aged 31, of aortic stenosis and rheumatic heart disease.

Harold A. Thompson ⊕ San Diego; University of Southern California College of Medicine, Los Angeles, 1906; member of the American Society of Clinical Pathologists; affiliated with Mercy Hospital, where he died, July 31, aged 64, of arteriosclerotic heart disease, hypertension and diabetes mellitus.

Albert Leopold Wahl, Oneonta, N. Y.; McGill University Faculty of Medicine, Montreal, Canada, 1935; member of the American Medical Association; served overseas during World War II; died in Mount Vision, July 1, aged 41.

Marion McDowell Webster, Ada, Okla.; St. Louis College of Physicians and Surgeons, 1905; served overseas during World War I; died July 6, aged 72, of coronary occlusion.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 9, 1948.

The Waste of Time and Material Under Medical Socialism

The waste of the doctor's time under medical socialism has been described in previous letters. With the onset of colder weather, doctors now complain they are so flooded with patients under the National Health Service that they have not time for the examination of serious cases. Hypochondriacs and persons who have only such ailments as slight colds, for which they would not trouble a doctor if they had to pay, come in numbers. At the first annual meeting of the Executive Councils' Association of the National Health Service the Minister of Health, Mr. Bevan, confirmed this waste and referred to other forms of waste as follows: "Because things are free is no reason why people should abuse their opportunities. This is a very great test of the maturity of the British people, in so far as they have all the resources of the medical profession at their disposal without charge. The general practitioner has a very great responsibility. Over-prescribing can be as bad as under-prescribing. Some general practitioners are very conscious of the impressiveness of long lists of drugs in their prescriptions on the psychology of their patients. We want the general practitioner to prescribe what he believes is necessary, and put nothing in his way. But we want to impress on him that it is not a good thing to evoke merely a psychologic response by prescribing too expensive drugs."

Mr. Bevan said that so far the services had operated reasonably smoothly and had been enthusiastically received by the vast mass of the population. Some things—not many—had gone wrong. Large numbers were making use of the free services. It seemed that an extraordinary proportion of the population had bad sight. The rush for spectacles had been so great that it had overtaken productive capacity. He was gratified that 18,165 of the general practitioners in the country had joined the service and that 92 per cent of the population were now on doctors' lists. The total was increasing daily, and he expected that by the end of the year practically all would be participating in the scheme. The number of dentists taking part had grown to over 80 per cent. By September 17 1,000,000 persons had sought dental treatment. The number of prescriptions dispensed was phenomenal, and the rate was twice that under the previous National Health Insurance scheme. If the rate were maintained it would mean that 140,000,000 to 150,000,000 prescriptions would be dispensed annually. Addressing the Institute of Arbitrators, Lord Horder drew a very different picture of the National Health Service. He deplored the lowering of the standards of the medical profession which had resulted from the passing of the Health Act. When doctors signed on the dotted line they capitulated not from conviction but from economic necessity. The implementation of the Act was being proved entirely premature. The health benefits were not available; health centers not only did not exist but would not exist for a considerable time. The Act had been a severe blow to the standard of medical practice in this country. It would be rather grotesque if medicine had to go back to the middle ages and form a guild of doctors to see that the standard of medical treatment was kept at a level to which the community was entitled.

Vitrellae

A new word has been added to the terminology of pharmacy. The Joint Formulary Committee of the British Medical Association and the Pharmaceutical Society, which is engaged in compiling a National Formulary, has been seeking a term for those therapeutic agents which are inhaled from a crushed glass capsule. In order to distinguish them from the "vapores" (inhalations), which form a distinctive group, the word "vitrellae" (crushable glass capsules) has been chosen. This title will be used in the National Formulary for medicaments enclosed in glass capsules covered with protective fabric and intended to be inhaled after crushing the capsule; e. g., Vitrella Amylis Nitritis.

Cars for the Disabled

Among the new means for the rehabilitation of the disabled are Ford-Anglia 8 horse power cars specially adapted to the needs of exservice men and ordered by the Ministry of Pensions. The front seats can be slid right back to allow easy entry and exit for drivers with artificial limbs. Many of them have special clutch, accelerator and brake controls beneath the steering wheel.

MADRID

(From Our Regular Correspondent)

Oct. 1, 1948.

National Interest in Gerontology

A chair on geriatrics was established at the Valencia University, in 1946, with Dr. M. Beltrán Baguena as its head. The Sociedad Española de Gerontología was recently established; it was created on motion of the Superior Council of Scientific Research. Dr. Beltrán Baguena, a professor of medical pathology, and his collaborators have carried on studies on the subject since 1936. His book, "Lecciones de Geriatría," contains lectures on the subject as they were taught by the author at the Valencia University, where geriatrics is now an obligatory subject of study. The inaugural meeting of the new society was held in Madrid, with Drs. Korenchewsky of London and Marañón of Spain as special guests. In the course of the meeting the official topics to be discussed in the First National Meeting of the Society of Gerontology of Spain were assigned. The national meeting will be held at Madrid this winter. The official speakers will be Dr. Pañella Casas, "Senile Changes of the Spine"; Dr. Navarro Gutiérrez, "Senile Tuberculosis," and Dr. Grande Cobián, "Metabolism of Carbohydrates in Senility." By a motion of Dr. Beltrán Baguena, it was resolved that the general activities of the society should mainly cover the fields of senile clinical pathology, biologic researches, demographic studies and studies for protection of the aged.

National interest in gerontology during the last few years is evident. There are important centers in various hospitals. The following are the most important: geriatric department at the Hospital Municipal de Nuestra Señora de la Esperanza in Barcelona, a very good hospital, with an excellent staff, beautiful buildings and complete up-to-date equipment. Drs. Vandrell and Martínez González are the director of the hospital and the head of the department of cardiology, respectively. Dr. Beltrán Baguena is the head of the hospital geriatric department. It was in this department that Dr. Pañella Casas organized a postgraduate course of lectures on geriatrics this year. These lectures will be published in a volume in the near future.

Dr. G. Marañón of the Instituto de Patología Médica of the General Hospital of Madrid recently established a department of geriatrics in the institute. Dr. F. Vega Díaz is the head of the department. Researches to be carried on in the department will mainly cover geriatric fields concerning endocrine and cardiologic subjects. This department will be open in October. There will be an inaugural Geriatric Week in which well known geriatric physicians of Spain and of some foreign countries will participate. During the following term of universitarian courses there will be a weekly lecture on geriatric topics. In the regular course of endocrinology in the chair of Dr. G. Marañón there will be regular lessons on endocrine geriatrics.

The National Department of Public Health recently created a permanent division which is dedicated only to sociologic research in the field of gerontology. The Sociedad Española de Gerontología will organize regular periodic geriatric lectures which will be delivered by foreign geriatric physicians who will be invited for this purpose. These lectures will begin in the near future. The studies on geriatrics in Spain are to be published in a supplemental issue of *Medicina Española,* which is edited in Valencia.

PALESTINE

(From Our Regular Correspondent)

JERUSALEM, Sept. 22, 1948.

Infectious Hepatitis in Pregnancy

B. Zondek and Y. M. Bromberg of Jerusalem made a study of infectious hepatitis in pregnancy during an epidemic of this disease which occurred in Palestine in the course of World War II.

Surprisingly few data have been reported during recent years when this disease complicated pregnancy. There is a tendency among obstetricians to consider infectious hepatitis in its sporadic form (hitherto known as catarrhal jaundice) as an essentially benign disease never leading to serious complications. Jaundice complicating pregnancy which leads rapidly to acute necrosis of the liver is generally considered as a particularly severe form of toxemia of pregnancy. In such cases the infective cause seems often to be overlooked, leading to misinterpretations in the diagnosis and prognosis. The clinical data reported in this study point out the fact that the benign icterus catarrhalis and the extremely serious form of hepatitis with acute liver atrophy in pregnancy should be considered as the same disease, both caused by the icterogenic virus of infectious hepatitis.

Twenty-nine patients suffering from infectious hepatitis were observed among 3,382 pregnant women over a period of thirty-two months. Of particular interest is the fact that nonpregnant women affected by hepatitis and considered as sources of contamination in many of the cases described had a mild form of hepatitis; on the other hand, some pregnant women who contracted the disease from them died of acute necrosis of the liver after a particularly severe clinical course.

It has been shown that infectious hepatitis may assume in pregnant women three different clinical courses: (1) hepatitis without jaundice (2 patients), with no clinically apparent jaundice, transitory bilirubinurea and only slight impairment of hepatic function; (2) moderately severe hepatitis (18 cases) which differs from the usual form of the disease by insidious onset with the symptoms of the preicteric stage often misinterpreted as due to pregnancy, rare occurrence of itching and bradycardia and serious functional impairment of the liver; (3) severe hepatitis with a tendency to acute necrosis of the liver (9 cases). Five of the 9 patients died from acute atrophy of the liver. The severity of the disease is indicated by pronounced mental instability, tachycardia, excessive vomiting, subsistence of pain in the liver area and reduction of the liver size; the laboratory examinations show progressive decrease of the urea blood levels, rapidly decreasing total cholesterol and cholesterol ester blood values, hypoglycemia and inadequate estrone inactivation.

In the study of factors contributing to the severity of infectious hepatitis in pregnant women, pregnancy must be considered a decisive factor aggravating the course of the disease. Moreover, undernutrition due to insufficient dietary intake or to excessive vomiting seems to play a particularly important role as an additional aggravating factor. In none of these cases studied was the fetus in utero contaminated by the disease of the mother; the virus of infectious hepatitis does not seem to be able to infect the fetus because either it does not pass the chorionic barrier or it circulates in insufficient amount in the blood to induce infection.

The treatment in cases of severe disease consisted in intravenous administration of essential nutritional factors (carbohydrates, proteins, essential amino acids and vitamins) in high doses. Blood transfusions were frequently administered. Despite treatment, 5 patients died from acute atrophy of the liver. It should be emphasized that although this mortality rate is high, 4 patients presenting symptoms of extremely grave prognostic omen (such as comatose condition, fetor hepaticus, reduction of liver size and laboratory findings of severe liver damage) could be saved.

The outstanding problem in the obstetric treatment of infectious hepatitis in pregnancy is whether artificial interruption of pregnancy should be performed. The results of this study seem to demonstrate that an active attitude is not advisable. The artificial termination of pregnancy made at the onset of the disease might sacrifice the fetus in a case in which the disease may have had a benign clinical course and greatly aggravate the hepatitis by the trauma which it involved. Cases in which there is aggravation of the clinical course after spontaneous abortion or delivery demonstrate that artificial interruption of pregnancy should be discouraged in infectious hepatitis in the interest of both mother and fetus.

Keratitis Rosacea Due to Allergy to Endogeneous Hormones

Allergy is considered to be the cause of a variety of ocular diseases. In general the disturbance is ascribed to hypersensitivity of the ocular tissue to exogeneous proteins.

B. Zondek and Y. M. Bromberg have found that patients suffering from typical allergic symptoms (asthma, vasomotor rhinitis, urticaria, angioneurotic edema) and certain other disorders not usually classified as such (premenstrual tension, pruritus vulvae, migraine) show in a certain percentage of cases hypersensitivity to their own hormones. They called this special kind of hypersensitivity "endocrine allergy."

Recently Zondek, J. Landau and Bromberg suggested that certain eye diseases of still unknown causation may be due to allergy to endogeneous hormones. The lack of any definite knowledge as to the cause of keratitis rosacea led them to test 6 patients suffering from this disease for presence of hormonal allergy. Three men and 3 women with keratitis rosacea associated with rosacea faciei of long duration (four to twenty years) which had proved refractory to the usual methods of treatment were tested by deep intracutaneous injections with various steroid hormones (estrone, estradiol, progesterone, pregnandiol, testosterone, androsterone and corticosterone). The reaction to a steroid hormone was considered positive when, twenty-four to forty-eight hours after injection of 0.1 mg. of steroid hormone dissolved in 0.1 cc. of specially purified olive oil, a red or pink slightly elevated and frequently itching papule occurred at the site of the injection.

The 6 patients with keratitis rosacea were tested with all the aforementioned hormones, with the following results: In all of them hypersensitivity to testosterone only was found. It is remarkable that in all the 6 patients examined (3 men and 3 women) the responsible hormonal allergen was always testosterone. This hormone is produced not only by Leydig's cells of the testes but also by adrenal tissue, and this circumstance probably explains the occurrence of allergy to this substance in mature women.

These descriptions pointing to the etiology of keratitis rosacea as an allergic reaction to the endogeneous testosterone do not exclude the possibility that other endogeneous hormones may act as allergens in some cases and that other causative factors may also be involved. Treatment of hypersensitivity to endogeneous hormones consists of specific desensitization by daily subcutaneous injections of the offending specific hormonal allergen in small and gradually increasing doses and in the present cases with testosterone. The initial dose of testosterone employed in desensitization should be very small, never exceeding 0.1 mg, and the increase should be gradual; administration of large doses may cause severe exacerbation.

Although therapeutic results in keratitis rosacea must be interpreted with great caution, spontaneous remissions occurring frequently, the results obtained seem to point out that the treatment was specific. The results achieved were as follows: The subjective symptoms such as photophobia, lacrimation and sensation of burning in the eyes, receded promptly and completely; the limbal and corneal vascular dilatation disappeared or considerably improved while the facial rosacea also decidedly improved. Mild recurrences in some instances promptly improved after administration of a second course of testosterone therapy. An effect on the permanent degenerative corneal changes could, of course, not be expected.

Correspondence

NEW PROBLEMS FROM NEW DISCOVERIES

To the Editor:—The excerpt from Sir Lionel Whitby on page 125 of The Journal for September 11, dealing with the new problems that immediately arise following such scientific discoveries as penicillin, streptomycin and the sulfonamide drugs, is excellent.

An appropriate postscript might be the following well known quotation from Walt Whitman:

"Now understand me well—It is provided in the essence of things, that from any fruition of success, no matter what, shall come forth something to make a greater struggle necessary."

John E. Walker, M.D., Columbus, Ga.

PHYSICIANS FOR VETERANS ADMINISTRATION

To the Editor:—We are taking the liberty of requesting your assistance in the recruitment of physicians for assignment to Veterans Administration installations in this area of Illinois, Indiana and Wisconsin. At present there is a critical need for physicians in tuberculosis, neuropsychiatry and general medicine.

It is our aim to furnish hospitalized veterans with medical care of the highest caliber. It is our desire that preference be given to the best qualified applicants and that among equally qualified persons, preference be given to veterans.

Salaries of these positions range from $4,479.60 to $10,000 per annum. Specialists certified by American specialty boards are paid an additional allowance of 25 per cent of their base salary. The grades and salaries for which applicants are eligible are determined by a Professional Standards Board, based on the individual applicant's professional background and experience. The age limit for physicians for appointment to positions in the operating service of the Department of Medicine and Surgery is 55.

Advantages of employment with the Veterans Administration are many. Physicians work with, and under the supervision of, some of the best medical men in the country. Consultants in most specialties, or full time physicians with board certification in these specialties, are assigned to our installations; this enables young physicians who have completed residencies to obtain the necessary training leading to board certification. Other advantages are opportunities for advancement, training in the newest medical technic, a liberal retirement plan, and annual or vacation leave of thirty days. Quarters are available at a number of our field installations at a reasonable rate.

The location of Veterans Administration installations, types and bed capacity, are as follows:

Veterans Administration Hospitals	Type	Bed Capacity	Teaching
Danville, Ill.	NP*	2,025	Nonteaching
Downey, Ill.	NP-TB†	2,047	Teaching
Hines, Ill.	GM&S‡	3,253	Teaching
Marion, Ill.	GM&S	176	Nonteaching
Dwight, Ill.	GM&S	256	Nonteaching
Fort Benjamin Harrison, Ind.	GM&S	500	Teaching
Indianapolis	GM&S	340	Teaching
Marion, Ind.	NP	1,924	Teaching
Tomah, Wis.	NP	1,172	Teaching
Waukesha, Wis.	TB	256	Nonteaching
Wood, Wis. (Center)	GM&S	1,463	Teaching

* Neuropsychiatric.
† Tuberculosis.
‡ General medical and surgical.

Any assistance that you can give us in obtaining services of qualified physicians for our medical staffs will be sincerely appreciated. Interested physicians may be referred to this office for additional information and the necessary application blanks or, if they so desire, they may apply directly to the installation where they desire placement.

John L. Johnston,
Director, Personnel Service,
17 N. Dearborn St., Chicago 2, Ill.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I & II.* Various Centers, Feb., June and Sept. 1949. *Part II.* April, 1949. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2, Pa. *Part III.* Boston & New York, Nov. 9-11, Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

American Board of Internal Medicine: *Oral.* San Francisco, Feb. 8-10, 1949. Final date for filing application is Dec. 1, 1948. New York City, March 23-25. Final date for filing application is Jan. 2. Philadelphia, June 1-3. Final date for filing application is Jan. 2. *Written.* Oct. 17, 1949. Final date for filing application is May 1. Asst. Sec.-Treas., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 1949. Final date for filing application is Jan. 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn.

American Board of Ophthalmology: *Written.* Jan. 14. *Oral.* San Francisco, March 21-24; New York, June 11-15; St. Louis, Oct. 15-19; Boston, Dec. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopedic Surgery: *Part I.* Various Centers, April & May. Final date for filing application is Dec. 31. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Otolaryngology: New York, Spring, 1949. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pediatrics: *Oral.* Atlantic City, Nov. 17-19. Sec., Dr. Lee F. Hill, 718 Royal Union Bldg., Des Moines, Iowa.

American Board of Physical Medicine: Atlantic City, June 4-5. Final date for filing application is March 15. Sec., Dr. R. L. Bennett, Georgia Warm Springs Foundation, Warm Springs, Ga.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Psychiatry & Neurology: *Oral.* May. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March 1949. Final date for filing application is Dec. 1. Sec., Dr. J. S. Rodman 225 S. 15th St., Philadelphia.

American Board of Urology: Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 28-30, 1949. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

California: *Oral.* Los Angeles, Nov. 20-21. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento 14.

Colorado: * Denver, Jan. 4-7. Final date for filing application is Dec. 18. Sec.-Treas., Dr. W. W. King, 831 Republic Bldg., Denver 2.

Connecticut: * *Examination.* Hartford, Nov. 9-10. Sec., Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic Examination.* Derby, Nov. 9-10. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

Delaware: *Examination.* Dover, Jan. 11-13. *Endorsement.* Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

Florida: * *Examination.* Jacksonville, Nov. 28-30. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O. San Francisco, Calif.

Hawaii: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 10-12. Dir., Bureau of Occupational Licenses, Miss Estella S Mulliner, State House, Boise

Indiana: *Examination.* Indianapolis, June 1949. Sec., Board of Medical Registration & Examination, Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Des Moines, Dec. 6-8. *Endorsement.* Des Moines, Dec. 6. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 15-16. Sec., Board of Medical Registration & Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 13-15. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville 2.

Louisiana: *Examination.* New Orleans, Dec. Sec.-Treas., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12. *Homeopathic Examination.* Baton Rouge, subject to call. Sec., Dr. F. H. Hardenstein, 715 Pere Marquette Bldg., New Orleans.

Maine: Portland, Nov. 9-10. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Examination* Baltimore, Dec. 14-17. *Endorsement.* At the discretion of the Board. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 7-8. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Massachusetts: *Examination.* Boston, Nov. 16-19. Sec., Board of Registration in Medicine, Dr. G. L. Schadt, 413 E. State House, Boston.

Mississippi: *Reciprocity.* Jackson, Dec. 6 Exec. Officer, State Board of Health, Dr. Felix J. Underwood, Jackson.

Nebraska: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Building, Lincoln 9.

Nevada: Carson City, Nov 1 Sec., Dr. G. H. Ross, Industrial Bldg., Carson City.

New Hampshire: Concord, March 10. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New York: *Examination.* Various Centers, Feb 1-4. Sec., Dr. J. L. Lochner, Jr., 23 S. Pearl St., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 17. Sec., Dr. Ivan M. Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-7. Act. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 13-15. Sec., Dr. H. M. Platter, 21 W Broad St., Columbus.

Oregon. * *Examination.* Jan. 5-7. Final date for filing application is Dec. 22, 1948. *Endorsement.* Jan. 21-22. Final date for filing application is Jan. 3. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, Jan., 1949 Act. Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: *Endorsement.* Columbia, Dec. 6. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Pierre, Jan. 18-19. Sec., Dr. G. J Van Heuvelen, Capitol Bldg., Pierre.

Utah: *Examination.* Salt Lake City, July. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Vermont: *Examination.* Burlington, Feb. Sec., Dr. F. J. Lawliss, Richford.

Virgin Islands: *Examination.* Charlotte Amalie, Dec. 8-9. Comm., Dr. Christian R. Moorhead, Charlotte Amalie.

Virginia: *Examination.* Richmond, Dec. 3-4. *Endorsement.* Dec. 2. Sec., Dr. K. D. Graves, 30½ Franklin Road, Roanoke.

Washington: * Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

West Virginia: Charleston, Jan. 3-5. Sec., Public Health Council, Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

Wisconsin: * Madison, Jan. 11-13, 1949. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls, Wis.

Wyoming: *Examination.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 21. Sec., Mr. Francis A. Roy, *University of Arizona, Tucson.*

Colorado: *Examination.* Denver, Dec. 1-2. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

Michigan: *Examination.* Ann Arbor & Detroit, Jan. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Jan. 4-5, April, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

Oklahoma: Spring of 1949. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. Sec., Basic Science Examining Committee, Dr. C. D. Byrne, Univ. of Oregon, Eugene.

South Dakota: *Examination.* Vermillion, Dec. 3-4. Sec., Dr. G. M. Evans, Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

Wisconsin: *Examination.* Milwaukee, Dec. 4. Final date for filing application is Nov. 27. Sec., Prof. W. H. Barber, Scott & Watson Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Right of Workmen's Compensation Commission to Subpoena Hospital Records.—During the course of a proceeding for an award under the workmen's compensation act, the Maryland Casualty Company petitioned for an order directing the Bellevue Hospital to produce certain hospital records before the Workmen's Compensation Board. From a decision ordering the director of the Bellevue Hospital to produce the hospital records in question, an appeal was taken to the supreme court, appellate division, first department, New York.

Section 119 of the workmen's compensation law provides that "a subpoena or a subpoena duces tecum may be signed and issued by the chairman, a member of the board, referee or such other officer as may be designated by the chairman. . . . Failure to obey such subpoena shall constitute a contempt as provided by the Civil Practice Act." On appeal of this case it was contended that, notwithstanding this section, the workmen's compensation board was without power to issue a subpoena duces tecum directing the production before it of hospital records at a hearing on a claim for compensation filed by the patient-employee. Four grounds were urged in support of this contention.

It was first contended that it is contrary to public policy to order records relating to mental condition to be produced at a hearing on a claim for workmen's compensation. No consideration of public policy, said the court, prevents the proper use by an injured employee of relevant hospital records relating to his mental condition. On the contrary, it would seem to be against public policy to exclude any competent and relevant evidence bearing on the nature and extent of the injuries claimed by the employee and their relation to an accident arising out of and in the course of his employment.

It was next contended that Section 34, Subdivision 9, of the mental hygiene law applied to Bellevue Hospital. This section provides that, on admission of a patient to any state institution in the Department of Mental Hygiene, a record of the case shall be kept by the director of the institution, which "record shall be accessible only to the director and such officers and subordinates of the institution as he may designate and to the commissioner and his representatives, except on the consent of the commissioner or an order of a judge of a court of record." Bellevue Hospital, said the court, is not a state institution, and its records, even if they relate to the mental condition of a patient, do not come within the purview of this section of the mental hygiene law.

The third contention was that Rule 162 of the Rules of Civil Practice requires that hospital records may be ordered produced only on order of a justice of the supreme court on one day's notice to the parties in interest. Clearly, said the court, this provision has no application to a hearing before the workmen's compensation board or a referee thereof on a claim for compensation filed by an injured employee. The rule relates only to an action or a proceeding before a court or a referee thereof. In view of the informal character of the proceedings under the workmen's compensation law, this rule should not be stretched by implication.

Finally, it was contended that under sections 352 and 354 of the civil practice act, the hospital records are privileged. We assume, said the court, that the workmen's compensation board has no right to disregard the statutory physician-patient privilege provided by the civil practice act. The physician-patient privilege, assuming it to apply, is waived, however, when a claim for compensation is not alone filed but is prosecuted by one competent to do so, since the valid prosecution of such a claim necessarily involves the giving of testimony on behalf of the claimant, with respect to the injuries alleged to have been caused by the accident. The privilege is deemed to have been waived as soon as evidence in his behalf is given of the claimant's injuries.

The order requiring the production of such records was reversed, however, because of a procedural question.—*Petition of Maryland Casualty Co., 80 N. Y. S. (2d) 181 (N. Y., 1948).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

15:213-252 (July) 1948

Genus Shigella and Shigellosis. E. Neter—p. 213.
Statistical Analysis of Deaths from Diabetes in District of Columbia for Period of 42 Years—1903-1944 inclusive. Preliminary Report and Analysis: Comparison of Two 5 Year Periods—1903-1907 and 1940-1944. J. A. Reed.—p. 233.
Dysentery, Colitis and Diarrhea in Japanese Civilian Prison Camps in the Philippines During World War II: III Non-Inflammatory, Concurrent and Dual Processes. F. G. Haughwout—p. 238.

American Journal of Medicine, New York

4:789-934 (June) 1948

Dynamics of Left Auricle in Mitral Valve Lesions: Fluorocardiographic Study. A. A. Luisada and F. G. Fleischner—p. 791.
*Application of Microplethysmography to Diagnosis of Patent Ductus Arteriosus and Coarctation of Aorta. R. S. Megibow and S. Feitelberg.—p. 798.
*Pheochromocytoma: Report of Case, with New Diagnostic Test. V. Guarneri and J. A. Evans.—p. 806.
Absorption and Metabolism of Lipiodol After Oral Administration: Method for Study of Fat Absorption and Fat Metabolism in Man. J. Groen.—p. 814.
Reiter's Syndrome: Report on Four Patients Treated with Streptomycin. T. A. Warthin.—p. 827.
*Clinical Value of Examination of Gastric Contents for Tubercle Bacilli. A. L. Banyai.—p. 836.
Technical Aspects of Therapeutic Malaria. L. I. Kaplan and H. S. Read.—p. 846.
Left Vocal Chord Paralysis Associated with Cardiac Disease. D. A. Dolowitz and C. S. Lewis.—p. 856.
Parenteral Benadryl in Allergy. S. Friedlaender and A. S. Friedlaender.—p. 863.

[illegible] in Patent Ductus Arteriosus.—[illegible] used a direct ink recording microplethysmograph in a study of patients with congenital heart disease. They obtained plethysmograms in 26 patients suspected of having patent ductus arteriosus and in 6 patients with suspected coarctation of the aorta. Tracings of the finger and toe tip volume pulsations were recorded and characteristic patterns were found. In patent ductus the following alterations were found: The apex of each wave was blunt, broad or flat; there was a loss of the normal difference between systolic rise and diastolic fall, the limbs tending to be equal; the dicrotic notch was either absent or barely discernible and tended to vary in position from beat to beat; small but significant fluctuations in contour and volume amplitude appeared from moment to moment. In coarctation of the aorta normal volume relationships in the finger and toe tracings were lost, so that the volume amplitude and alpha waves in the fingertip tracing were greater than or at least equal to the analogous waves in the tracings from the toe tip. The findings illustrate the value of microplethysmography in diagnosis of these anomalies.

New Test for Pheochromocytoma.—Guarneri and Evans report preoperative diagnosis of a chromaffinoma of the adrenal gland by means of a new diagnostic test and successful removal of the tumor. The effects of methacholine chloride, atropine and curare were studied in the patient, a woman aged 23. Methacoline produced an initial transitory fall in blood pressure followed by a rise to hypersensitive levels. Atropine abolished the "muscarinic" reactions to methacholine but failed to influence the rise in pressure. Curare did not affect the response to methacholine in any way. A test for pheochromocytoma, based on the reaction to 25 mg. of methacholin given subcutaneously, is described. An initial fall in blood pressure of short duration which is followed by a decided and more sustained rise to hypertensive levels constitutes a positive reaction. Of 27 control patients receiving methacholine, none showed this hyper-reactor response. Comparison is made between the histamine and the methacholine test. In 9 patients, 5 showed a hyper-reactor response to histamine. It is suggested that the methacholine test may be more reliable than the histamine test in diagnosis of pheochromocytoma inasmuch as no hyper-reactors were noted among the controls when methacholine was administered. From the pharmacologic evidence presented it is deduced that methacholine directly stimulates the chromaffin tissue of pheochromocytoma.

Examination of Gastric Contents for Tubercle Bacilli.—Banyai has used gastric aspirations in the search for tubercle bacilli since 1933. He is convinced that bacteriologic examination of the fasting gastric contents can be used to advantage in tuberculosis work for the following purposes: (1) in clinical diagnosis; (2) for the management of tuberculous patients; (3) in follow-up examinations of patients presumably recovered from tuberculosis; (4) for bacteriologic screening of persons in close contact with persons suffering from tuberculosis, and (5) for the study of persons roentgenograms of whose chests show abnormalities. It is the author's practice to pool individual gastric specimens obtained on successive days. The pooled specimens are prepared for culture or animal inoculation as a single specimen. The author discusses the possible sources of tubercle bacilli in the fasting gastric juices and shows that the examination is of value in pulmonary as well as in extrapulmonary forms of tuberculosis. In 7 of 22 patients with tuberculosis of bone and joint, without demonstrable active tuberculous involvement in the lung, tubercle bacilli were found in the stomach juice. The usefulness of this method was tested in tuberculous lymphadenitis, pleurisy with effusion, renal tuberculosis and lupus vulgaris. The results show that examination of the fasting gastric contents is of importance in establishing the diagnosis in a substantial percentage of such cases.

American J. Obstetrics and Gynecology, St. Louis

55:917-1086 (June) 1948. Partial Index

Normal and Cystic Structures of the Broad Ligament. G. H. Gardner, R. R. Greene and B. M. Peckham.—p. 917.
Possible Significance of Arterial Visualization in Diagnosis of Placenta Previa. L. J. Hartnett.—p. 940.
Characteristics in Hysterosalpingograms in Tuberculous Salpingitis and Endometritis. Ko-Chi Sun.—p. 953.
Evaluation of Plasma Pitocinase Determination in Toxemias of Pregnancy. Gloria T. Aragon.—p. 961.
*Leukemia and Pregnancy. J. A. Williams.—p. 967.
Effect of Equine Gonadotropin (Gonadogen) on Human Ovary. S. A. Wolfe and I. Neigus.—p. 979.
Chorea Gravidarum. Review of Recent Literature and Report of Five Cases. T. W. McElin, S. B. Lovelady and H. W. Woltman.—p. 992.
Newer Obstetric Analgesics. C. J. Lund.—p. 1007.
Method of Obstetric Analgesia and Anesthesia. L. M. Schadel Jr.—p. 1016.
Hyaluronidase in Treatment of Human Sterility. R. E. Tafel, P. Titus and W. W. Wightman.—p. 1023.
Poliomyelitis in Pregnancy. H. Gifford and R. L. Hullinghorst.—p. 1030.
Menstrual Dysfunction Due to Emotional Factors. M. Fremont-Smith and J. V. Meigs.—p. 1037.
Uterine Suspension: Report of Results. W. H. Vogt Jr., R. V. Boedeker and G. Lopez.—p. 1044.
Phenolsulfonphthalein as Test for Determination of Tubal Patency. G. Speck.—p. 1048.
Treatment of Erythroblastosis Fetalis with Rh Hapten. J. Loughrey and Bettina B. Carter.—p. 1051.
Torsion of Pregnant Uterus with Rupture. S. L. Siegler and L. M. Silverstein.—p. 1053.

Leukemia and Pregnancy.—Williams reviews the literature on the coexistence of leukemia and pregnancy and adds 2 cases, which bring the total to 90. One of the cases concerned a woman in whom chronic myelogenous leukemia was complicated by pregnancy. This woman is still living a year after delivery. The other case is unique in that it is the first reported instance of monocytic leukemia associated with pregnancy. This woman was delivered by cesarean section two hours after spontaneous rupture of the membranes. The baby was normal. The mother died eight days after delivery. Postmortem examination revealed acute monocytic leukemia, with leukemic infiltration of all organs, monoblastemia, petechial hemorrhages of all organs, acute ulcerative gingivitis, multiple infarcts of the spleen and pulmonary edema. In the first patient, it seems probable that the leukemic state antedated conception and gestation by several months, while in the second instance onset during pregnancy seems likely. The course and the findings at necropsy in the patient with acute monocytic leukemia, though unique in obstetric literature, are in close accord with previous reports; the natural history of the disease was apparently not altered by the complicating pregnancy. The medical management of both of these cases was of a supportive nature. Leukemia is not transmitted from mother to child.

American Journal of Physiology, Baltimore

152:471-702 (March) 1948. Partial Index

Effect of Sympathectomy on Blood Flow in Human Limb. I. D. Stein, K. Harpuder and J. Dyer.—p. 499.
Effects of Exercise and of Some Other Influences on Renal Circulation in Man. H. L. White and Doris Rolf.—p. 505.
Duration of Renal Ischemia Required to Produce Uremia. P. B. Hamilton, R. A. Phillips and Alma Hiller.—p. 517.
Effect of 20, 60 and 120 Minutes of Renal Ischemia on Glomerular and Tubular Function. R. A. Phillips and P. B. Hamilton.—p. 523.
Influence of Hypotension on Coronary Blood Flow, Cardiac Work and Cardiac Efficiency. J. E. Eckenhoff, J. H. Hafkenschiel, E. L. Foltz and R. L. Driver.—p. 545.
Arterial Pressure Pulse Waves in Patient with Coarctation of Aorta. M. Galdston and J. M. Steele.—p. 554.
Validity of T-1824 in Plasma Volume Determinations in Human. W. N. Campbell, A. Sokalchuk and R. Penman.—p. 563.
Serum Ac-Globulin; Formation from Plasma Ac-Globulin; Role in Blood Coagulation; Partial Purification; Properties; and Quantitative Determination. A. G. Ware and W. H. Seegers.—p. 567.
Influence of Heparin on Optical Density of Clotted Plasma. R. H. K. Foster.—p. 577.
Importance of Pressure Factors in Genesis of Pulmonary Edema Following Vagotomy. A. H. Sussman, A. Hemingway and M. B. Vischer.—p. 585.
Attempt to Produce Pulmonary Edema by Increased Intracranial Pressure. A. Surtshin, L. N. Katz and S. Rodbard.—p. 589.
Retention of Sex Functions After Isolation of Pars Anterior by Extirpation of Hypophysial Stalk. C. G. Breckenridge and A. D. Keller. —p. 591.
Inhibition of Epinephrine Action in Severe Hypoxemia. A. Surtshin, S. Rodbard and L. N. Katz.—p. 623.
Effect of Administering Agenized Amino Acids and Wheat Gluten to Dogs. G. W. Newell, S. N. Gershoff, F. H. Fung and C. A. Elvehjem.—p. 637.
pH of Gastric Mucous Secretion. F. Hollander, F. U. Lauber and J. J. Stein.—p. 645.
Reduction of Central Hyper-Irritability Following Block Anesthesia of Peripheral Nerve. O. E. Reynolds and H. C. Hutchins.—p. 658.
Rate of Recovery of Temperature-Regulating Responses After Ether Anesthesia. A. Hemingway.—p. 663.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

59:771-914 (June) 1948

*Neutron Therapy and Specific Ionization. R. S. Stone.—p. 771.
Dosage Measurements for Various Methods of Intrauterine Radium Applications in Cancer of Endometrium. J. F. Nolan and W. Natoli. —p. 786.
Cancer of Corpus Uteri Following Radiation Therapy for Benign Uterine Lesions. F. R. Smith and L. Bowden.—p. 796.
*Roertgen Changes Produced by Diffuse Torulosis in Newborn. E. B. D. Neuhauser and A. Tucker.—p. 805.
*Toxoplasmosis: Report of Case with Roentgen Demonstration of Unusual Intracranial Calcifications. S. H. Fisher and D. Wilson.—p. 816.
Skeletal Lesions in Leukemia: Clinical and Roentgenographic Observations in 103 Infants and Children, with Review of Literature. F. N. Silverman.—p. 819.
Significance of Triangular Hilar Shadows in Roentgenograms of Infants and Children. R. M. Harvey and R. S. Bromer.—p. 845.
Tuberculous Calcification: Clinical and Experimental Study. R. G. Bloch. —p. 853.
Mucosal Studies in Colitis Due to Parasites. J. Arendt and J. Coheen. —p. 865.
Unusual Case of Rickets. C. Gottlieb and H. Feld.—p. 877.
Parosteal Osteoid Chondroma. F. Leeser.—p. 882.
Amplification of Fluoroscopic Image by Means of Thick Dense Clear Crystalline Detector Screen and Scanning Roentgen-Ray Tube. R. J. Moon.—p. 886.

Neutron Therapy.—Stone says that neutrons were first used in the treatment of human cancer in 1938. The late effects from the irradiation of animals with neutrons are greater in proportion to the early effects than would be expected from previous experience with such effects from roentgen irradiation. Neutron therapy has resulted in such bad late sequelae in proportion to the few good results that it should not be continued. Eighteen patients have been kept alive, but none of them are free from distressing late effects. Any one contemplating the use on patients of new radiations such as multimillion volt protons, beta rays and roentgen rays should study the relative biologic effectiveness of them by late reactions as well as by acute early ones.

Roentgen Changes Produced by Diffuse Torulosis in the Newborn.—According to Neuhauser and Tucker calcification of the brain is rarely observed on roentgenograms made during the neonatal period. The exact nature of the intracranial calcifications that were occasionally observed went without explanation until the work of Wolf, Dyke and associates demonstrated that intracerebral calcification was frequently associated with toxoplasmic encephalomyelitis. Another cause for calcification in the brain in the neonatal period was demonstrated recently by Landing and Farber, who described the postmortem finding in an infant 7 weeks of age of a diffuse meningoencephalitis caused by Torula histolytica (Cryptococcus neoformans). Their studies demonstrated that the combination of degeneration of the brain, meningoencephalitis, calcification within the brain, chorioretinitis and generalized visceral involvement found so characteristically in infants with toxoplasmic infection may be produced by another infectious agent. Since the discovery of torulosis in that infant, the occurrence of the disease has been proved at postmortem examination in 2 more infants in the same laboratory. This paper is concerned primarily with a description of the roentgenologic changes in these 3 patients. Each showed evidence of mild hydrocephalus on roentgenographic study and diffuse punctate and confluent calcification of the severely degenerated brain. The calcification resembles that seen with toxoplasmic encephalitis. Enlargement of the liver was present in each patient and enlargement of the spleen was striking. Two patients showed inflammatory and granulomatous lesions in the lungs, and 2 showed nonspecific submetaphysial decalcification of the long bones. In each patient the infection was evidently acquired in utero, during delivery or early in the neonatal period. The damage produced by the fungus was severe, and fatal within a few weeks after birth.

Toxoplasmosis with Intracranial Calcifications.—Fisher and Wilson report a white female infant who lived to be 17 months old and who showed the classical picture of congenital toxoplasmic encephalitis of convulsions, cerebral calcifications, chorioretinitis and hydrocephalus. Antibody neutralization studies carried out on the child's and the mother's serum showed both to have antibody reactions positive for Toxoplasma. Roentgenograms showing the unusual intracranial calcifications are presented. Since this child's disease was probably contracted from the mother, it is interesting to note that the only animals the parent had any contact with were a pet dog during the last two months of her pregnancy and a canary as a pet for one summer, two years before the child was born. Callahan reports that both of these animals are natural hosts of Toxoplasma.

American Journal of Surgery, New York

76:1-120 (July) 1948

Free Skin Grafting. J. A. Jenney.—p. 3.
Filarial Funiculitis: Report of Case Discovered at Operation for Inguinal Hernia. B. L. Coley and B. Lewis.—p. 15.
*Intravenous Drip Anesthesia with Pentothal Sodium: Report of 7,694 Cases. G. Cottam.—p. 23.
Wounds of Common Carotid Arteries: Report of Seventeen Cases from World War II. K. B. Lawrence, L. M. Shefts and J. R. McDaniel. —p. 29.
*Placental Blood and Placental Extract in Wound Healing. F. R. Cole. —p. 38.
Comparison of Crash Injuries in Man and in Laboratory Animals. R. F. Rushmer and G. M. Hass.—p. 44.
Shock Caused by Extremity Wounds. R. Birchall.—p. 51.
Hemangiomas of Striated Muscle. G. F. Goeringer.—p. 58.
Therapeutic Stellate Ganglion Block Using Local Anesthetics. B. B. Clark and S. Wolfson.—p. 66.
Meckel's Diverticulum. H. M. Zeidman.—p. 69.
Technic of Operation for Varicose Veins. J. E. Summers.—p. 72.
Oxygen Therapy in Surgery. W. H. Kisner.—p. 76.
Fracture Deformity Reduction and Fixation Splints: Linear Fracture Through Head of Humerus. H. C. Masland.—p. 83.
Tendon Repair with Steel Wire. G. H. Pratt.—p. 87.
Plastic Repair for Postoperative Anal Incontinence. R. Turrell, J. B. Gordon and K. Davis.—p. 89.

Drip Anesthesia with "Pentothal Sodium."—Cottam presents his experiences in over seven thousand operations that were carried out with the patient under anesthesia induced by the intravenous administration of "pentothal sodium" alone or in combination. Major surgical interventions were carried out in 4,545 of the cases. "Pentothal" was used for major operations in such circumstances, as when surgeons would schedule a minor operation that would turn out to be a major one. It was soon realized that the postoperative course was smoother than after other forms of anesthesia. There were fewer cases of vomiting and gas pains and fewer instances of acute dilation of the stomach. The recovery period was shorter. When an operation was begun with patient under "pentothal" anesthesia and an inhalation anesthetic was added for better relaxation, the postoperative recovery was much smoother than if an inhalation anesthetic had been used alone. After that combination anesthesia was used widely. One of the most popular at the author's hospitals is intravenous administration of a combination of "pentothal sodium," oxygen, cyclopropane and curare. At first a 5 per cent solution was used, but when it was found that some patients slept for long periods afterward, weaker solutions were tried. Now the author never uses a solution that is stronger than 1 per cent, and in very young and very old patients 0.5 per cent. "Pentothal" given by syringe is dangerous and solution strengths above 1 per cent are not safe. The intravenous drip method with solution strengths of 1 per cent and below are not dangerous. The author outlines a safe preoperative and postoperative routine and stresses the advantages of intravenous anesthesia alone or in combination.

Placental Blood and Placental Extract in Wound Healing.—Cole used placental blood in combination with extract of placental tissue in chronic granulating wounds of varicose ulcer decubitus variety. Placental blood was collected aseptically in sterile pans. The blood was mixed with sterile jelly so that the consistency was that of a paste. The mass of red cells before being used was mixed with an extract of placenta. This extract was obtained by squeezing the placentas of the same patients whose blood was used. A number of illustrating case histories are presented. A comparative study of the pooled red cell mass and the placental mass demonstrates conclusively that the healing action of the latter is more potent. The patients on whom the preparation has been used were mostly people of advanced age who had wounds of varying periods of time. The substance greatly alleviated pain. Penicillin was tried in 1 patient both locally and parenterally with signal failure. The substance used proved to be superior. The fact that the placental mass produces better effects than red cells may be due to a greater amount of "growth hormone" and also perhaps due to a greater amount of the steroids, glycogen and vitamin C in placental tissue.

Annals of Internal Medicine, Lancaster, Pa.

28:1075-1234 (June) 1948

*Reiter's Disease: Report of 5 Cases Including Two Successfully Treated with Hyperthermia. E. W. Lowman and R. J. Boucek.—p. 1075.
*Histoplasmin and Tuberculin Sensitivity in Relation to Pulmonary Calcifications Among University of Wisconsin Students. Helen A. Dickie and Elizabeth A. Clark.—p. 1087.
Thoracic Stomach Produced by Esophageal Hiatus Hernia and Congenital Short Esophagus. F. J. Putney.—p. 1094.
Management of Destructive Arthritis of Hip by Means of Intravenous Procaine. D. J. Graubard, J. Kovacs and H. H. Ritter.—p. 1106.
Vitamin E in Heart Disease. H. Levy and E. P. Boas.—p. 1117.
Studies on Experimental Phosgene Poisoning. V. Infusions in Treatment of Experimental Phosgene Poisoning. H. D. Bruner, Mary H. Gibbon, M. D. McCarthy and others.—p. 1125.
Carotid Artery Thrombosis: Report of Eight Cases Due to Trauma. H. W. Caldwell and F. C. Hadden.—p. 1132.
Massive Dosage of Penicillin Administered by Continuous Intramuscular Infusion. R. L. Fisher and M. Zuckerman.—p. 1143.
Treatment of Angina Pectoris with Prophylthiouracil. G. Hollander and H. Mandelbaum.—p. 1150.

Reiter's Disease.—Lowman and Boucek report 5 cases of Reiter's disease. Four are typical cases with the classical triad of urethritis, conjunctivitis and arthritis. In the fifth patient the syndrome was incomplete, conjunctivitis being absent. Two of the patients presenting the complete triad responded to treatment with artificial hyperthermia and penicillin and promptly went into remission. These patients had been chronically ill for six and seven months respectively. Follow-up examinations after four and six months respectively showed no recurrence. If this favorable response to fever and penicillin can be obtained in other cases of Reiter's disease it will mean a substantial reduction in the morbidity of a protracted disease process.

Histoplasmin and Tuberculin Sensitivity in Wisconsin Students.—Dickie and Clark show that histoplasmin sensitivity among students at the University of Wisconsin reflects what is known of the geographic distribution of such sensitivity in the United States. A significant proportion of hilar and pulmonary calcifications seen in roentgenograms of the chest is not associated with tuberculin sensitivity. In this series 66 of 73 such calcifications in tuberculin-negative persons were associated with histoplasmin sensitivity. The incidence of pulmonary calcifications of the entire group surveyed in this study was 38.3 per cent in the students reacting only to histoplasmin and 9.2 per cent in those who reacted to tuberculin alone. Small pulmonary infiltrates indistinguishable roentgenologically from tuberculous lesions may be associated with histoplasmin sensitivity and not tuberculin sensitivity. The authors consider it erroneous to base a diagnosis of tuberculous infection merely on the roentgenologic detection of pulmonary calcifications or infiltrations.

Archives of Ophthalmology, Chicago

39:135-260 (Feb.) 1948

Degeneration and Regeneration of Nerves in Corneal Transplantation. H. Escapini.—p. 135.
Tests of Defective Color Vision. B. Chance.—p. 162.
Iridotasis ab Externo for Relief of Glaucoma Simplex. W. A. Stoutenborough.—p. 173.
Tangent Screen Illuminators: Construction, Use and Advantages. C. Berens and M. Luckiesh.—p. 176.
Amblyopia ex Anopsia: New Concept of Its Mechanism and Treatment. B. M. Lazich.—p. 183.
Congenital Impatency of Nasolacrimal Duct. D. Guerry III and E. L. Kendig Jr.—p. 193.
*Spontaneous Absorption of Congenital Cataract Following Maternal Rubella. L. H. Ehrlich.—p. 205.
Distance Discrimination: I. Theoretic Considerations. M. J. Hirsch and F. W. Weymouth.—p. 210.
Id.: II. Effect on Threshold of Lateral Separation of Test Objects. M. J. Hirsch and F. W. Weymouth.—p. 224.
Sodium Sulfacetimide in Ophthalmology. L. L. Mayer.—p. 232.

Spontaneous Absorption of Congenital Cataract Following Maternal Rubella.—Ehrlich reports a hitherto undescribed development in congenital cataract following maternal rubella; namely, its spontaneous absorption, leaving only a membrane in its wake. Such absorption has rarely been seen in congenital cataracts of presumably different origin. A case in which the process occurred is described. Four other cases in which this process may have taken place, in 3 of which the mother had rubella during the early part of the pregnancy, are cited.

Arkansas Medical Society Journal, Fort Smith

45:1-40 (June) 1948

Surgical Treatment of Hypertension. G. De Takats.—p. 1.
Solitary Bone Cyst of Os Calcis (Form of Osteitis Fibrosa). J. M. Hundley.—p. 7.

45:41-56 (July) 1948

Surgical Management of Congenital Malformations of Anus, Rectum and Colon. H. E. Bacon and A. C. Hering.—p. 41.
Prevention of Cancer of the Rectum and Colon: Diagnosis and Treatment of Pre-Cancerous Lesions. M. S. Craig Jr.—p. 46.

Blood, New York

3:719-822 (July) 1948

Relation of Adrenal Cortical Hormone to Lymphoid Tissue and Lymphocytes. W. N. Valentine, C. G. Craddock Jr. and J. S. Lawrence. —p. 729.
Changes in Circulating Leukocytes Induced by Administration of Pituitary Adrenocorticotrophic Hormone in Man. A. G. Hills, P. H. Forsham and C. A. Finch.—p. 755.
Blood Picture in Addison's Disease. J. Báez-Villaseñor, C. E. Rath and C. A. Finch.—p. 769.
*Carbamates in Chemotherapy of Leukemia: I. Procedure for Screening Compounds for Leukotoxic Action. H. E. Skipper, W. H. Riser Jr., Anne Stelzenmuller and Helen Holt.—p. 774.
*Para-Aminobenzoic Acid in Leukemia. C. J. D. Zarafonetis, G. A. Andrews, M. C. Meyers and F. H. Bethell.—p. 780.
Acute Thrombocytopenia Induced in Dogs by Administration of Urethane (Ethylcarbamate). W. O. Cruz and H. Moussatche.—p. 793.
Method for Obtaining Living Leukocytes from Human Peripheral Blood by Acceleration of Erythrocyte Sedimentation. A. H. Minor and L. Burnett.—p. 799.

Carbamates in Leukemia.—This report by Skipper presents a simple and rapid technic for rough qualitative determination of the leukopenic action of a given agent, the mouse being used as the experimental animal. Results of hematologic studies with urethane, nitrogen mustard, roentgen rays, potassium arsenite and benzene are reported herein. The first phase of the hematologic screening technic entailed determination of the acute LD_{50} of the agent to mice by parenteral administration, isotonic sodium chloride solution, 10 per cent gum acacia, propylene glycol or peanut oil being used as the carrier. In the second phase of the study, mice were grouped and given injections at the LD_{50} level and at one half the LD_{50} level. Five mice from each group were killed for hematologic study at two and four or four and seven days after injection. In accord with general statistical practice, it is assumed that any group of animals having a mean leukocyte count of plus or minus 3 standard deviations from the control mean has been significantly affected by the therapy in question. On this basis, there can be little doubt that the leukopenic action of urethane, nitrogen mustard, roentgen ray, potassium arsenite and benzene has been demonstrated by the assay.

Para-Aminobenzoic Acid in Leukemia.—Zarafonetis and his co-workers deal with the results obtained in 10 patients to whom para-aminobenzoic acid was administered. Five of these subjects had chronic myelogenous leukemia; 3 had subacute myelogenous leukemia, subclassified in 2 as erythroleukemia, and 2 had chronic lymphatic leukemia. Para-aminobenzoic acid was placed in solution by conversion to sodium para-aminobenzoate with sodium bicarbonate. The final volume was adjusted to make a 10 per cent solution, which was administered orally to the patients in 20 cc. to 40 cc. doses (2.0 Gm. to 4.0 Gm.) every two hours, day and night. The solution was taken most readily in a small amount of fruit juice or ginger ale. Para-aminobenzoic acid, administered in large doses as sodium para-aminobenzoate, caused a striking lowering of the leukocyte count in 5 patients with chronic myelogenous leukemia and in 1 patient with subacute myelogenous leukemia. It caused less definite decreases of the white cell count in 2 patients with chronic lympatic leukemia, but the periods of administration may have been too short to obtain maximal effects. In every instance there was a prompt rise in the number of leukocytes when the administration was stopped. Although there was decrease in spleen size in some of the patients, the objective clinical improvement was but slight and temporary. Sodium para-aminobenzoate is not considered a practical adjunct to the therapy of leukemia at this time. It is hoped that studies of the cellular chemistry involved in the apparent inhibitory action of sodium para-aminobenzoate may yield information concerning the disordered metabolism of leukemic cells.

Cincinnati Journal of Medicine

29:317-378 (June) 1948

Aspects of Use of Chemotherapy and Antibiotics. M. Finland.—p. 317.
Present Knowledge of Exophthalmos and Its Surgical Treatment. H. N. Naffziger.—p. 329.
Local Anesthesia in Cesarean Section. J. F. Mohan.—p. 335.

29:379-426 (July) 1948

Evaluation of Newer Methods of Treatment of Thyrotoxicosis. R. H. Williams.—p. 379.
Pathogenesis of Tuberculosis. H. C. Sweany.—p. 383.

Connecticut State Medical Journal, Hartford

12:607-702 (July) 1948

Modern Treatment of Thyrotoxicosis. J. H. Means.—p. 609.
Early Treatment of Mentally Ill in Rehabilitation as Viewed by General Physician. S. S. Levine.—p. 615.
*Glaucoma as Post Operative Complication of Hysterectomy, Oophorectomy, Enterectomy and Enteroenterostomy. J. A. McCreery and R. J. Hansel.—p. 620.
Spontaneous Rupture of Esophagus: Case Report. C. E. McLeod and N. Gardner.—p. 622.
Three Cases of Pemphigus in Same Family: Report of One Case. L. W. Granirer.—p. 623.
*Experience with Use of Nitrogen Mustard at Hartford Hospital. N. W. Wawro.—p. 625.
Evidential Trends in Diagnostic Activities in Public Health Laboratories. F. L. Mickle.—p. 631.

Glaucoma as Complication of Hysterectomy.—McCreery and Hansel report a woman, aged 61, who was operated on for a suprapubic mass extending to the umbilicus. This mass originated in the right ovary. There were a number of small fibroids in the uterine wall. The ovarian mass had become firmly adherent to the lower leaf of the mesentery of the ileum. The usual hysterectomy was performed. Since it was found impossible to free the tumor, it was removed with about 10 inches (25.4 cm.) of the ileum; an end to end enteroenterostomy was done. On the fifth postoperative day the patient complained of neuralgia-like pain over the right eye, which seemed to continue in spite of warm compresses and sedatives. On the sixth postoperative day the tension in the right eye was found to be 50 by Schiotz tonometer. The eye was definitely hard to finger tip pressure and showed deep scleral injection. The cornea appeared moderately hazy. On the basis of a diagnosis of glaucoma, treatment with physostigmine salicylate was instituted, and this controlled the tension in both eyes. Later, when the patient became sensitive to physpstigmine, therapy was changed to pilocarpine hydrochloride. Since the tension in the right eye remained rather high, a corneosclerectomy was done in this eye with good control of the tension.

Nitrogen Mustard at Hartford Hospital.—Wawro says that since July 1946 nitrogen mustard has been made available to the Hartford Hospital by the National Research Council for clinical use in selected cases of lymphoma, polycythemia vera and advanced cancer of the lung. This agent has been used on 27 patients. Experience has been limited to the use of methyl-bis (B-chloroethyl) amine hydrochloride, since there is less danger of venous thrombosis with this agent. The prescribed daily intravenous dose was 0.1 mg. per kilogram of body weight. Four daily treatments constituted the usual course, though occasionally treatment would be withheld on the third day when pronounced nausea and vomiting occurred. Established diagnoses in cases in which the treatment was used were Hodgkin's disease, lymphosarcoma, chronic lymphatic leukemia, mycosis fungoides, polycythemia vera, inoperable bronchogenic carcinoma and widespread carcinomatosis from breast and gastrointestinal tract. Favorable and dramatic clinical remissions in advanced and terminal cases have lasted from ten days to fourteen months. The best results were obtained in Hodgkin's disease, but significant palliation was achieved in lymphosarcoma, chronic lymphatic leukemia, mycosis fungoides and advanced metastatic bronchogenic cancer. Roentgen therapy is still the treatment of choice for localized lymphoma, since the margin of safety is greater and this therapy can be given locally. Once the disease becomes refractory to irradiation or too extensive for local treatment, nitrogen mustard suggests itself as a useful therapeutic agent.

Delaware State Medical Journal, Wilmington

20:85-108 (May) 1948

Approach to Problem of Alcoholism. C. N. Davis.—p. 85.
Newer Concepts in Treatment of Peptic Ulcer. G. S. Serino.—p. 92.
Toxic Adenoma of Thyroid Co-Existing with Carcinoma of Uterus: Case Report. F. J. Gilday.—p. 95.

20:109-130 (June) 1948

Practical Application of Vaginal Smear as Method in Clinical Gynecology. I. Slovin, W. B. Silberblatt and H. B. Safford.—p. 109.
Acute Lymphocytic Choriomeningitis. A. H. Williams.—p. 113.
*Chronic Intestinal Upsets Due to Amebiasis. H. D. Groff.—p. 116.
Some Developments in Military Medicine. W. S. Stone.—p. 118.
Preventive Measures for Atomic Explosion. A. J. Bauer.—p. 121.

Chronic Intestinal Upsets Due to Amebiasis.—Groff stresses that practitioners should be aware of tropical diseases in overseas veterans and should be on the lookout for amebic infestation in those who have chronic gastrointestinal upsets. In 6 patients (3 soldiers, 2 sailors and 1 civilian) who were observed in the course of nine months, there was soreness of the abdomen, more especially over the cecum. These men had recurrent bouts of profuse, watery and occasionally bloody diarrhea, with eight to ten bowel movements daily. Diarrhea lasted twenty-four to seventy-two hours. Following diarrhea, there would be a period of relief of four to seven days, although they continued to have "irritable colon," with the desire to defecate after ingestion of food. Two of the men had occasional bloody rectal discharges. Four of the 6 patients had had an examination of a warm stool specimen and sigmoidoscopy. Endamoeba histolytica was found in the material obtained by the sigmoidoscope in only 1 of 4 cases. This was attributed to the fact that these men had received a mixture of camphorated opium tincture and bismuth compound for an acute attack just prior to the examination. These patients were given a trial course of antiamebic therapy, with prompt relief of the symptoms. Treatment of amebiasis varies in different clinics, but emetine hydrochloride is chiefly used in the dysentery or abscess forms of amebiasis, and not only does it possess antiamebic effect, but seems to act as an antispasmodic and antipyretic drug. Not only should amebic infestation be considered in the presence of intestinal complaints, but invasion elsewhere in the body, such as in the liver, gallbladder, lung or brain, should also be watched for.

Journal of Clinical Investigation, Boston

27:1-150 (May), Part 2, 1948. Partial Index

Procedures Used at Stateville Penitentiary for Testing of Potential Antimalarial Agents. A. S. Alving, B. Craige Jr., T. N. Pullman and others.—p. 2.
Use of SN-10,275 in Prophylaxis and Treatment of Sporozoite-Induced Vivax Malaria (Chesson Strain). T. N. Pullman, Lillian Eichelberger, A. S. Alving and others.—p. 12.
Pentaquine (SN-13,276), Therapeutic Agent Effective in Reducing Relapse Rate in Vivax Malaria. A. S. Alving, B. Craige Jr., R. Jones Jr. and others.—p. 25.
Clinical Trial of Eighteen Analogues of Pamaquin (Plasmochin) in Vivax Malaria (Chesson Strain). A. S. Alving, T. N. Pullman, B. Craige Jr. and Others.—p. 34.
Comparison of Chloroquine, Quinacrine (Atabrine), and Quinine in Treatment of Acute Attacks of Sporozoite-Induced Vivax Malaria (Chesson Strain): Preliminary Report. T. N. Pullman, B. Craige Jr., A. S. Alving and others.—p. 46.
Therapeutic Effectiveness of Large Doses of Paludrine in Acute Attacks of Sporozoite-Induced Vivax Malaria (Chesson Strain). R. Jones Jr., T. N. Pullman, C. M. Whorton and others.—p. 51.
Lichen-Planus-Like Eruption Occurring During Course of Chloroquine Administration. B. Craige Jr., C. M. Whorton, R. Jones Jr. and others.—p. 56.
Studies on Chemotherapy of Human Malarias. J. A. Shannon, D. P. Earle Jr., R. W. Berliner and J. V. Taggart.—p. 66.
Technic for Detection of Minimal Numbers of Malaria Parasites; Its Application in Detection of Suppressed Vivax Malaria. R. W. Berliner, T. J. Kennedy Jr. and F. S. Bigelow.—p. 134.
Methemalbumin: I. Appearance During Administration of Pamaquine and Quinine. M. Rosenfeld, C. G. Zubrod, W. D. Blake and J. A. Shannon.

Journal of Nutrition, Philadelphia

35:629-750 (June) 1948. Partial Index

Comparative Growth-Promoting Values of Proteins of Cereal Grains. D. B. Jones, A. Caldwell and Katherine D. Widness.—p. 639.
Nutritive Value of Cereal Proteins in Human Subjects. C. A. Kuether and V. C. Myers.—p. 651.
Role of Thyroid Activity in Pathogenesis of Hepatic Lesions Due to Choline and Cystine Deficiency. P. Handler and R. H. Follis Jr.—p. 669.
Lysine, Methionine and Threonine Content of Meats. Irene T. Greenhut, R. J. Sirny and C. A. Elvehjem.—p. 689.
Iron and Copper Metabolism of Young Women on Self-Selected Diets. Flowayne Holt and Florence I. Scoular.—p. 717.

Journal of Pediatrics, St. Louis

32:629-774 (June) 1948

Review of Boeck's Sarcoid with Analysis of 12 Cases Occurring in Children. R. B. Cone.—p. 629.
*Further Observations Concerning Hypofunction of Adrenals During Early Life: "Salt and Water" Hormone Deficiency. J. C. Jaudon.—p. 641.
Constitutional Statural Overgrowth and Increased Lower Body Segment with Normal Sexual Development in Family of Four. G. B. Dorff.—p. 670.
*Sclerema Neonatorum. W. E. Hughes and M. L. Hammond.—p. 676.
*Clinical Signs and Development of Survivors of Kernicterus Due to Rh Sensitization. Lottie Lande.—p. 693.
Pulmonary Calcification in Twins. G. Houston and W. A. Steiger.—p. 706.

Hypofunction of Adrenals During Early Life.—Jaudon emphasizes that the pediatrician should acquaint himself with the life-sustaining functions of the adrenal glands and should think of the possibility of temporary hypofunction of these glands when dealing with infants who present symptoms of protracted gastrointestinal disturbances, who fail to gain weight, who have an unexplained tendency to dehydration and who respond unsatisfactorily to the accepted therapeutic measures. The author presents 5 cases which demonstrate the existence of a fractional and transitory disturbance in adrenal function. The patients required administration of desoxycorticosterone acetate and salt for long periods to sustain life. Low carbon dioxide-combining power, elevated nonprotein nitrogen, and moderately low serum sodium chloride during periods of hemoconcentration were present in all cases. The clinical course before, during and after hormone therapy is evidence suggesting a temporary absence or physiologic low supply of the desoxycorticosterone factor of the adrenal cortex.

Sclerema Neonatorum.—Hughes and Hammond define sclerema neonatorum as an uncommon disease characterized by a diffuse, rapidly spreading, nonedematous, tallow-like hardening of the subcutaneous tissue of infants in the first few weeks of life. The skin in involved areas cannot be picked up, and the subcutaneous tissue seems bound down to subjacent muscle and bone. The involvement usually starts on the buttocks, thighs or trunk, but may spread to involve any area of the body save the soles, palms and genitalia. The affected infants often have other diseases associated with the process, such as pneumonitis, enteritis, intracranial hemorrhage or congenital heart disease. Many show difficulty with respect to temperature control and little tendency to spontaneous movement. The disease is usually discovered in the first few days after birth. The course is usually rapidly downhill with a fatal termination. In reviewing the cases reported in the literature as sclerema, the authors have eliminated all cases which seem more typical of subcutaneous fat necrosis, scleroderma or hydrops. The significant findings from the 28 cases reviewed are as follows: Average age of onset was four days with extremes from birth to 70 days; 25 per cent of the mothers were ill at the time of delivery; all but two deliveries were spontaneous; average birth weight was 2,800 Gm., with variations from 2,150 to 4,100 Gm.; the majority of infants exhibited abnormal behavior at birth, weakness and cyanosis being the most common symptoms; almost all children had difficulty with control of body temperature and evidences of other complications besides sclerema; 75 per cent died, with the average age of death 10 days; at necropsy of 11 infants thickening of connective tissue bands was the most common observation. The authors present detailed histories of 3 additional cases. Various etiologic theories have been proposed. Most of the evidence favors the hypothesis that sclerema neonatorum may be a manifestation of severe shock in early infancy and that the hardening of fat and thickening of collagen fibers in the subcutaneous tissues may result from insufficiency of peripheral circulation.

Survivors of Kernicterus Due to Rh Sensitization.—Lande reports 8 cases of kernicterus due to Rh sensitization observed at the Dixon State Hospital. The development of these children was followed for several years, the oldest now being 11½ years of age. These cases fall clinically into four distinct groups: In the first, there is a generalized athetosis due to destruction in the corpus striatum and globus pallidus. In the second, there is persistent spasticity from involvement of the pyramidal and extrapyramidal systems. In the third, ataxia and disturbance of balance are the predominant features suggesting cerebellar degeneration. In the fourth, atonic diplegia from involvement of the extrapyramidal tract dominates the picture. Most patients show combinations of signs of all these four varieties. In some of the cases, there was a change from spasticity to hypotonia. In addition to these motor disturbances, a considerable percentage of the patients exhibit cranial nerve signs. Four patients were deaf; one of them was blind and deaf; another had a transitory blindness. Several patients had ocular signs suggestive of transitory or permanent involvement of the third or sixth cranial nerve nuclei. The mental development in most of these cases was retarded from the beginning and soon came to a standstill. The part played by damage to the liver in the causation of icterus gravis neonatorum is now generally recognized. Why the destructive process has a predilection for the nuclear masses of the brain is still open for discussion. That kernicterus develops only in a certain percentage of patients with malignant jaundice of the newborn suggests that in addition to the Rh allergy of the mother there may be another constitutional hereditary factor predisposing the fetal brain to damage. There are families in which the nervous system of the members seems to be abnormally susceptible to damage from infections and toxic or emotional disturbances. The author reviews the family histories of his 8 patients and finds that high intelligence but predisposition to nervous breakdowns and mental depression were found in some of the parents. Mongolism, encephalomeningitis and other cases of kernicterus were found among the siblings.

Journal Pharmacology & Exper. Therap., Baltimore

93:127-258 (June) 1948. Partial Index

Chronic Oral Toxicity of Chloroquine. O. G. Fitzhugh, A. A. Nelson and O. L. Holland.—p. 147.
Effect of Vitamin A Deficiency on Toxicity of Strychnine. J. F. Suchy and C. F. Poe.—p. 153.
Ouabagenin. K. K Chen, R. C. Anderson and H. M. Worth.—p. 156.
Comparative Effectiveness of Five Antihistaminics vs. Histamine-Induced Spasm in Canine Thiry-Vella Loops. B. N. Craver, Anne Cameron and F. F Yonkman.—p. 168.
Influence of Diphenhydramine Hydrochloride and Epinephrine on Glucose Metabolism in Rabbit. G. Chen and Isabel G. Clarke.—p. 175.
Sugar Alcohols: Pharmacodynamic Studies of Polyoxyalkylene Derivatives of Hexitol Anhydride Partial Fatty Acid Esters. J. C. Krantz Jr., C. J. Carr, J. G. Bird and Sally Cook.—p. 188.
Effect of Central Nervous System Depressants on Emptying Time of Human Stomach. D. W. Northup and E. J. Van Liere.—p. 208.
Toxicologist and Antihistaminic Properties of N,N'-Dimethyl-N'-Phenyl-N'-(2-Thienylmethyl) Ethylene-Diamine Hydrochloride (Diatrin). N. Ercoli, R. J. Schachter, W. C. Hueper and M. N. Lewis.—p. 210.
Niaara: Digitalis-Like Colombian Arrow Poison. K. Mezey, C. Uribe-Piedrahita, J. Pataki and J. Huertas-Lozano.—p. 223.
Cholinesterases of Human Erythrocytes and Plasma and Their Inhibition by Antimalarial Drugs. C. I. Wright and J. C. Sabine.—p. 230.
Effect of Certain Goitrogenic Drugs on Absorption of Radioactive Iodine by Thyroid Gland of Rats and Chicks. R. W. Rawson, D. A. McGinty, W. Peacock and others.—p. 240.

Michigan State Medical Society Journal, Lansing

47:579-688 (June) 1948

*Cornelian Corner: Practical Application of Basic Mental Hygiene Principles. L. H. Bartemeier.—p. 617.
Allergic Dermatoses: Recognition and Management. S. Friedlaender.—p. 619.
Dermatitis from Wearing Apparel. L. Schwartz.—p. 624.
Cancer Cemetery: Great Culture Medium. H. S. Hulbert.—p. 628.
Postoperative Foreign Bodies in Abdomen. E. S. Zawadzki and K. M. Truemner.—p. 630.
Vertigo: Differential Diagnosis and Treatment. J. R. Lindsay.—p. 632.
Hemometakinesia: Therapeutic Application to Peripheral Vascular Disease. M. E. DeBakey.—p. 636.

Cornelian Corner: Healthy Parent-Child Relationship.—Bartemeier describes the formation and aims of the "Cornelian Corner," an organization of pediatricians and clinical psychologists the chief aim of which is the promotion of healthy parent-child relationships. The organization is named for Cornelia, the mother of the Gracchi. It aims to reestablish the practices in infant care which were in vogue when babies were born in the home. It was customary for mothers to nurse their babies, to feed them as often as they seemed to need nourishment and to give them a great deal of mothering. Fathers commonly assisted in the care of their infants, and brothers and sisters had free access to the new baby. The separation of infants from their mothers and fathers in our modern hospitals is unhealthy for both the parents and their offspring, and it prepares for difficulties in the subsequent parent-child relationship. Natural mothering establishes the first human relationship, which becomes the foundation for all other subsequent relationships. Through its efforts to have the newborn infant in the same room with its mother from the time of birth, the Cornelian Corner hopes to make it possible for the father of the child to visit as often as he can. It encourages him to hold his infant so that he, too, may begin to love his child as early as possible.

Military Surgeon, Washington, D. C.

103:1-84 (July) 1948. Partial Index

Treatment of Peripheral Nerve Injuries. W. McK. Craig.—p. 1.
Supply of Whole Blood to Forward Mobile Medical Field Units of Ninth U. S. Army. A. C. Shainmark.—p. 14.
Personnel Selection Procedures in Military Aviation. B. Groesbeck Jr.—p. 16.
Injuries of Hypoglossal Nerve: Report of 10 Cases. E. M. Alrich and G. S. Baker.—p. 20.
Sanitary Team Organization in Japan. C. F. Sams.—p. 25.
High Acceleration of Short Duration. J. R. Poppen.—p. 30.
Problems of Flight Personnel Selection and Training. L. D. Carson.—p. 32.
Reconstruction Surgery of Hand. F. L. Liebolt.—p. 43.
Operative Correction for Hammer Toe. A. A. Michele and F. J. Krueger.—p. 52.
*Preventive Measures for Atomic Explosion. A. A. Bauer.—p. 55.

Preventive Measures for Atomic Explosion.—Bauer estimates that casualties will be counted in the tens of thousands. With the large number of burns and mechanical injuries expected, the immunization of the population against tetanus should be considered. Disruption of water supply and sewage disposal systems would suggest immunization against organisms infecting the digestive tract. The demand for blood transfusions suggests the advisability of pretyping the population and devising some method of indicating each person's type. The psychologic preparation of the public is of vital importance. False complacency through overoptimism will lead to a severe psychologic shock. Overemphasis of the devastation produced may lead to panic. Since light-colored loose clothing furnishes good protection against flash burns, the cooperation of clothing designers may be important. If the bomb is detonated high in the air, residual radioactivity will not be a problem. Casualties from immediate radiation have in the past comprised between 15 and 20 per cent of the patients treated. Good nursing care and use of blood transfusions, antibacterials, vitamin C and intravenous administration of dextrose and sodium chloride will be the most important factors in the treatment.

New England Journal of Medicine, Boston

238:857-890 (June 17) 1948

Osteoarthritis of Cervicodorsal Spine (Radiculitis) Simulating Coronary-Artery Disease: Clinical and Roentgenologic Findings. D. Davis and M. Ritvo.—p. 857.
*Uterine Cancer: Its Early Detection by Simple Screening Methods. D. J. McSweeney and D. G. McKay.—p. 867.
Brill's Disease: Report of 2 Serologically Proved Cases of Typhus Fever in Irish-Born Residents of Boston. H. R. Morgan, F. A. Neva, R. J. Fahey and M. Finland.—p. 871.
Use of Benadryl in Parkinson's Disease: Preliminary Report of 8 Cases. J. Budnitz.—p. 874.
Intercapillary Glomerulosclerosis. P. Kimmelstiel and W. B. Porter.—p. 876.
Adenocarcinoma of Common Bile Duct and Papilla of Vater.—p. 880.
Colloid Goiter, with Cyst Formation.—p. 883.

Screening Methods for Detection of Uterine Cancer.—A year ago McSweeney and McKay started a clinic for the early detection of cancer of the uterus at the Boston City Hospital. All departments of the hospital have been requested to refer as many women over 35 years of age as possible to the gynecologic clinic for "screening," which consists of a gynecologic history, with special attention to abnormal bleeding and vaginal discharges, a pelvic examination, a speculum examination and a vaginal smear. The last is most valuable as a test to determine patients that may require diagnostic curettage or cervical biopsy not otherwise indicated by the history and pelvic examination. In one year 639 patients were examined and 934 smears studied. Of 54 cases of cancer, 51 were diagnosed correctly by smear. Six cases of carcinoma, which might otherwise have been neglected, were detected by the vaginal smear technic, and 6 others were detected simultaneously by biopsy and smear.

238:891-922 (June 24) 1948

*Focal Epilepsy: Statistical Study of Its Causes and Results of Surgical Treatment. I. Epilepsy Secondary to Intracranial Tumors. J. C. White, C. T. Liu and W. J. Mixter.—p. 891.
Swimming Pools: Their Relation to Illness J. R. Gallagher.—p. 899.
Mycotic Aneurysm of Brachial Artery After Cure of Bacterial Endocarditis: Successful Treatment by Surgical Excision. A. Hurwitz and D. B. Arst.—p. 903.
Primary Hemangioendothelioma of Liver in Infancy: Report of Case. S. W. Berezin, J. G. Sharnoff and J. D. Stein.—p. 906.
Intercapillary Glomerulosclerosis. P. Kimmelstiel and W. P. Porter.—p. 908.
Chronic Inactive Pulmonary Tuberculosis. Oleothorax. Amyloidosis of Kidney, Spleen and Adrenal Glands.—p. 912.
Metastatic Renal Adenocarcinoma.—p. 915.

Epilepsy Secondary to Intracranial Tumors.—White and his associates state that of 1,130 patients admitted to the Massachusetts General Hospital with epilepsy in the decade 1935 to 1944, inclusive, 240 had seizures arising from an area that could be localized by clinical signs, pneumography and electroencephalography. In all these cases the disease has been verified by exploratory craniotomy. The authors have divided this series into two groups: 160 cases of cerebral compression caused by intracranial tumors and 80 cases of acute or chronic epilepsy due to trauma or infection. Epilepsy is a common complication of brain tumors, accompanying approximately one out of every three such growths when the hemispheres are compressed or invaded. When a middle-aged patient complains of epilepsy of recent onset, occurring without previous trauma or infection, tumor of the brain is the most probable diagnosis. The tumor with accompanying early seizures is most likely to be growing slowly and situated near the surface of the hemisphere, either a meningioma or astrocytoma or an oligodendroglioma. If attention is paid to this important sign, an early search can be made for the lesion and radical excision attempted before the patient has reached the critical advanced stage. Chances of "curing" the convulsive state, however, are not good. In 33 cases of astrocytoma no patient has had an apparent cure, and in only 8 have the frequency and severity of the seizures been significantly reduced. Epileptic convulsions have continued in the remaining 22, owing to the surgical difficulty of totally eradicating the diffusely invasive forms of astrocytoma or avoiding the irritative action of the contracting scar after radical removal of these tumors. Three others suffered their first convulsions after operation. Of 4 patients with oligodendroglioma, 1 has been entirely relieved of his seizures and another greatly improved. In the more malignant glioblastoma multiforme and metastatic carcinoma of the brain benefits obtained persisted for only a few months. Lesions of the basal ganglions and third ventricle are infrequently a cause of epilepsy. Tumors limited to the posterior fossa usually produce atypical seizures associated with transitory attacks of vertigo, syncope and irritation of the lower cranial nerves. This syndrome, classified as "ictus subtentorialis," is caused by compression of pons or medulla. In the rare case in which typical major seizures occur, it is usually found that a medulloblastoma has implanted itself above the tentorium.

New Orleans Medical and Surgical Journal

100:539-596 (June) 1948

*Clinical Observations on Treatment of Alcoholic. R. C. Young.—p. 539.
Myxedema: Report of Ten Cases from General Hospital. E. F. Chanton and M. D. Hargrove.—p. 546.
Human Equine Encephalomyelitis, Eastern Type, in Louisiana. G. H. Hauser.—p. 551.
Chromomycosis: Report of Case from Louisiana with Discussion of Its Clinical and Mycologic Features L K Mundt and M. Moore.—p. 558.
Tracheotomy with Complication of Pneumothorax. A. Thomas and N. W. Holland.—p. 565.
Myocardial Aneurysm Causing Esophageal Obstruction: Report of Case Presenting Double Cardiac Aneurysm with Severe Dysphagia Necessitating Gastrostomy. M. Isaacson.—p. 568.
Papilloma of Gallbladder: Case Report. G. McHardy and E. Edwards. —p. 573.
Repair of Parotid Duct Fistula with One Case Report. L. H. Stander and C. C. Craighead.—p. 574.

Treatment of Alcoholic Addicts.—Young reports on study of 2,275 sanitarium cases of alcoholism, the majority of which were observed and studied for at least four weeks. He found that every addict to alcoholism has a psychiatric problem, which varies in intensity from case to case. The nutritional and vitamin imbalance produced by alcoholism is most important, and improvement in the nutritional state is frequently accompanied by improvement in the psychiatric symptoms. The vast majority of alcoholic addicts should be institutionalized for study and treatment. Every alcoholic addict given the proper help can get well and stay well, provided that he accepts the fact that under no circumstance can he take an alcoholic drink of any type.

New York State Journal of Medicine, New York

48:1313-1422 (June 15) 1948

*Diagnosis of Primary Carcinoma of Lung. D. Woodman.—p. 1359.
Volvulus of Sigmoid Colon. V. D. Woronov, B. S. Epstein and H. W. Louria.—p 1364.
Use of Recovery Room in Lowering Maternal Mortality. L. F. McLean, H. C. McDowell and M. G. Sadugor —p. 1368.
Comparative Studies with Some Newer Tests for Hepatic Dysfunction. H. K Linder, M. Bruger and C. H Greene.—p. 1371.
Association of Psychosomatic Disorders and Their Relation to Personality Types in Same Individuals. E. Moschcowitz and Mata B. Roudin. —p. 1375.
Electrocardiogram in Infectious Mononucleosis. H. L. Jaffe, L. E. Field and A. M. Master.—p. 1382.
The Nitrofurans. L. E. Daily.—p. 1386.
Coccidioidomycosis in Veterans of World War II. H. E. Bass and A. Schomer.—p. 1391.

Diagnosis of Carcinoma of Lung.—Woodman stresses that early diagnosis depends on efforts to shorten the time between the appearance of first symptoms and diagnosis (forty-five weeks) and the period between the patient's first seeking medical care and the final diagnosis (seventeen and a half weeks). Once the patient is in a hospital where the diagnostic team is available, the time of arriving at a diagnosis is not long. In 105 patients it averaged ten days. The author reviews 116 cases of primary carcinoma of the lung. The average age of the patients was 55 years. Ten of the patients—that is, less than 10 per cent—were women. The chief symptoms were: chronic productive cough, pain, loss of weight, weakness and dyspnea, with bloody sputum and frank hemoptysis generally late symptoms. The author discusses the diagnostic value of roentgenoscopy, bronchoscopy and biopsy. Means of hastening the diagnosis of primary carcinoma of the lung include earlier investigation of a cough of unknown origin. Patients with a cough of more than three weeks' duration should have roentgen examination of their chests. The diagnostic advantages of a hospital where the internist, roentgenologist, bronchoscopist and thoracic surgeon can act as a team in making the diagnosis should be resorted to early.

Northwest Medicine, Seattle

47:397-470 (June) 1948

Prefrontal Leukotomy: Neurosurgical Aspects. F. Turnbull.—p. 414.
Prefrontal Leukotomy: Selection of Patients. A. E. Davidson.—p. 417.
Prefrontal Leukotomy: Aftercare and Rehabilitation. R. L. Whitman. —p. 419.
*Transorbital Lobotomy: Preliminary Report of 41 Cases. C. H. Jones and J. G. Shankin.—p. 421.
Paraphysical Cyst of Third Ventricle. W. B. Dublin.—p. 427.
Modern Methods of Cranioplasty. H. J. MacKay.—p. 430.
Modern Concepts of Pathologic Physiology of Bronchial Asthma. H. Miller.—p. 432.
Recurring and Chronic Cough in Children. Role of Sinusitis. E. E. Brown.—p. 435.
Treatment of the Acute Asthmatic. J. E. Stroh.—p. 438.
Hay Fever in Seattle Area: Counts of 1945-1946 Seasons. E. F. Deppe. —p. 439.

Transorbital Lobotomy.—Jones and Shanklin direct attention to the transorbital approach to the brain, which was developed by Framberti on the basis of the work of Moniz and others. The authors report 41 cases in which Freeman's method of transorbital lobotomy was employed. Beneficial effects were produced in four fifths of the 35 patients in whom more than one month had elapsed since operation. Transorbital lobotomy has produced no deaths or major postoperative complications. A unilateral ptosis of the upper eyelid was produced in 4 cases, but this gradually disappeared without residual paralysis. Prefrontal lobotomy can be performed safely by means of the transorbital technic. It does not produce demonstrable postoperative disability and may cause the disappearance of the physiologic and psychologic components of tension. Transorbital lobotomy may be considered for the patient not permanently aided by electroshock but in whom a major lobotomy might not be indicated. Transorbital lobotomy parallels the more radical procedure in that its postoperative course in successful cases is accompanied by decided relief from anxiety and inner turmoil.

Physiological Reviews, Baltimore

28:139-282 (April) 1948

Neural Control of Pituitary Gland. G. W. Harris.—p. 139.
Fertilization and Immunity. A. Tyler.—p. 180.
Chemoreception in Insects. V. G. Dethier and L. E. Chadwick.—p. 220.
Use of Microorganisms for Assay of Vitamins. E. E. Snell.—p. 255.

Psychosomatic Medicine, Baltimore

10:71-130 (March-April) 1948

Studies on Epilepsy: Petit Mal Attack as Response Within Central Nervous System to Distress in Organism-Environment Integration. W. Barker.—p. 73.
Psychiatric Implications of Kinsey Report. L. S. Kubie.—p. 95.
Psychomotor Syndrome Associated with Heterotopic Pancreatic Adenoma. E. L. Sevringhaus.—p. 109.
Orientation Chart in Teaching of Psychosomatic Medicine. M. Levine. —p. 111.
Whealing Response to Light and Cold with Note on Mechanism and Origin of Physical Allergies. H. A. Abramson.—p. 114.

Public Health Reports, Washington, D. C.

63:805-836 (June 18) 1948

Role of Dentist in Oral Cancer Detection. R. S. Lloyd.—p. 805.
Objectives and Program of Arkansas Cancer Detection Project. A. N. Koplin.—p. 813.

63:837-864 (June 25) 1948

National Mental Health Program: Progress Report. R. H. Felix.—p. 837.
Studies of Acute Diarrheal Diseases: XXI. Salmonellosis in Florida. Mildred M. Galton and A. V. Hardy.—p. 847.

63:865-900 (July 2) 1948

Liquid Ascitic Medium for Isolation of Mycobacterium Tuberculosis from Pathologic Material. L. Šula.—p. 867.
Emotional Factors in Tuberculosis. A. O. Ludwig.—p. 883.

Rocky Mountain Medical Journal, Denver

45:353-448 (May) 1948

Advent of Socialized Medicine in Britain. J. W. Sinney.—p. 373.
Concept of Preoperative and Postoperative Surgical Therapy. C. G. Heyd.—p. 376.
End Results of Operative Treatment of Low Back Pain. E. Parnall and T. Moore.—p. 379.
Evaluation of Present Treatment of Toxic Goiter. G. B. Kent.—p. 382.
Obstetric Hemorrhage. L. W. Mason.—p. 388.

45:449-536 (June) 1948

Malaria in Utah. H. L. Marshall and D. M. Rees.—p. 469.
Progressive (Disseminated) Coccidioidomycosis During Pregnancy. J. C. Mendenhall, W. C. Black and G. E. Pottz.—p. 472.
Differential Diagnosis of Sciatic Pain. R. M. Stuck.—p. 477.
Congenital Diaphragmatic Hernia Through Pleuroperitoneal Canal (Foramen of Bochdalek). H. Swan.—p. 480.
Functions of County Medical Society. H. L. January.—p. 488.

South Carolina Medical Assn. Journal, Florence

44:187-220 (June) 1948

President's Address. O. B. Chamberlain.—p. 187.
Case of Dysgerminoma with Description of Recurrence. R. B. Durham, D. F. Adcock and C. A. Sweatman.—p. 190.
Peptic Ulcer of Esophagus: Report of Case. Gertrude R. Holmes. —p. 193.
Public Health and Protein Nutrition. H. M. Carter Jr.—p. 195.

Southern Surgeon, Atlanta, Ga.

14:351-412 (June) 1948

Tuberculous Abscess of Thyroid Gland: Report of Case. W. M. Stubbins and R. F. Guthrie.—p. 351.
Vascular Spasm: Review. R. B. Pomerantz.—p. 358.
Early Rising After Major Abdominal Surgery. I. L. Greenberg.—p. 375.
Embolus of the Femoral Artery: Report of Case. L. H. Battle Jr. —p. 387.
Tuberculosis of Breast. T. P. Dann.—p. 391.
Surgery of Sympathetic Nervous System. J. H. Johnston Jr.—p. 397.
Prevention of Postoperative Pulmonary Complications of Upper Abdominal Surgery with Intercostal Nerve Block. J. Canipelli.—p. 404.

Surgery, Gynecology and Obstetrics, Chicago

87:1-104 (July) 1948

Study of Peripheral Vascular Disease with Radioactive Isotopes—Part I. D. C. Elkin, F. W. Cooper Jr., R. H. Rohrer and others.—p. 1.
Observations on Production of Pericordial Adhesions and Ligation of Coronary Arteries. A. W. Boone and D. S. Hubbell.—p. 9.
Principles Old and New of Resection of Colon for Carcinoma. L. S. McKittrick.—p. 15.
Effect of Heparin on Wound Healing. E. M. Alrich and E. P. Lehman. —p. 26.
Preservation of Function in Cystic and Sclerotic Ovaries: Report of 16 Cases of Single Ovary. P. Jacobson.—p. 31.
Treatment of Empyema with Topical and Systemic Penicillin and Other Antibacterial Agents: Analysis of 20 Cases. W. E. Burnett, G. P. Rosemond, J. H. Hall and H. T. Caswell.—p. 44.
Effect of Streptomycin in Experimental Strangulation of Bowel. H. A. Davis, J. Gaster, R. L. Marsh and P. A. Pritel.—p. 63.
"Buried Epidermis" Graft. E. Bors and A. E. Comarr.—p. 68.
Treatment of Congenital (or Developmental) Coxa Vara. T. Horwitz. —p. 71.
*Effect of Tetra-Ethyl Ammonium Chloride on Gastric Secretion and Acidity in Peptic Ulcer. J. M. Ferrer Jr.—p. 76.
*Transition of Pancreatic Edema into Pancreatic Necrosis. H. L. Popper, H. Necheles and K. C. Russell.—p. 79.
Self Centering Lorenz Osteotomy. C. Scuderi.—p. 83.
Factors Influencing Mortality from Acute Perforated Peptic Ulcers. W. T. McElhinney and C. E. Holzer Jr.—p. 85.
*Intravenous, Subcutaneous and Rapid Intramuscular Infusions of "Protein Hydrolysate." J. J. Weinstein.—p. 93.

Effect of Tetraethyl Ammonium Chloride on Acidity in Peptic Ulcer.—Ferrer points out that investigations by Acheson, Moe, Lyons and their co-workers indicate that tetraethyl ammonium salts produce an effective block of all autonomic nerve impulses, both sympathetic and parasympathetic, and that this block occurs at the autonomic ganglions. One of the many effects of this block is reported to be a decrease in gastrointestinal motility and in the volume and acidity of the gastric juice. An investigation was undertaken to determine whether the excessive night secretion in patients with peptic ulcer could be prevented by vagus nerve block with tetraethyl ammonium chloride ("etamon chloride"). The block produced by tetraethyl ammonium chloride is not a pure vagal block but a combination of vagal plus sympathetic block. The drug prevented excessive night gastric secretion and acidity in twelve of seventeen tests of patients with peptic ulcer. Intramuscular dosage of approximately 20 mg. of tetraethyl ammonium chloride per kilogram of body weight is usually adequate to produce this effect if repeated at intervals of four hours but is not uniformly adequate at intervals of six hours. When the compound was given at four hour intervals, excessive night gastric secretion and acidity were inhibited in 6 of 7 patients with peptic ulcer. No serious toxic or side effects were noted. Transient fall in both systolic and diastolic blood pressures was noted after administration of the drug. Therapeutic trial of the effect of tetraethyl ammonium chloride on the symptoms and healing of peptic ulcers is warranted and will be undertaken.

Transition of Pancreatic Edema Into Necrosis.—Popper and his co-workers show that the usual pathogenetic mechanism of acute pancreatitis is a block either by stone or spasm at the papilla of Vater in the presence of a common channel between common bile duct and pancreatic duct. The subsequent increase of pressure in the duct system and the intraductal activation of pancreatic juice are regarded as causes of acute pancreatitis. The presence of a common channel was observed in nine tenths of the cases of pancreatic edema, of acute pancreatitis and of pancreatic necrosis. This, together with the observation that transition of pancreatic edema into acute pancreatitis occurred, suggested that these processes were related. The method used by the authors for experimentally producing pancreatic edema consisted in stimulation of external pancreatic secretion by intravenous injection of a large dose of secretin after ligation of the main pancreatic duct or of the main and accessory ducts. Since the authors did not succeed in producing pancreatic necrosis by increasing or prolonging the edema-producing administration of secretin, it became apparent that pancreatic necrosis or hemorrhagic pancreatitis is not merely a later stage of pancreatic edema. Procedures such as obstruction of lymphatic drainage or of venous return from an edematous pancreas, or the production of shock in dogs with edema of the pancreas, did not elicit necrosis. Positive results were obtained with temporary occlusion of the main pancreatic artery, if performed while edema of the pancreas was present. The important fact is that temporary local ischemia is able to transform a clinically harmless transient edema of the pancreas into hemorrhagic pancreatic necrosis. The clinical applications of these experimental observations are: 1. Local vasomotor changes may be responsible for the transition of pancreatic edema into pancreatic necrosis. 2. The extent of local vasomotor changes may determine the degree of pancreatitis. 3. If acute pancreatitis is diagnosed or its presence is suspected, everything should be done to make a presumably existing edema disappear and to avoid local ischemia. To make the edema disappear it seems best to give spasmolytics which will relax the sphincter of Oddi, to prevent any stimulation of the external secretion of the pancreas and to attempt its active inhibition. Local vasomotor changes are nothing unusual after surgical procedures, and this may in part explain the poor results of surgical intervention in acute pancreatitis.

Infusions of Protein Hydrolysate.—The solution used by Weinstein was a 5 per cent protein hydrolysate in distilled water. The source of the protein was bovine blood, collected under sanitary conditions, processed and hydrolyzed by means of a pancreatic enzyme preparation. The hydrolysate is then treated to remove harmful constituents and diluted to the desired concentration. Filled sealed bottles of the solution are sterilized by autoclaving and packaged in 500 or 1,000 cc. containers. In 2,003 consecutive intravenous infusions of 1,000 cc. each, in 320 preoperative and postoperative surgical patients there were 0.72 per cent reactions. Four hundred and twenty subcutaneous infusions of 1,000 cc. were given at a rate of 6.25 cc. per minute in 126 patients without local difficulties. One hundred and seventy intramuscular injections of 1,000 cc. of protein hydrolysate in 78 patients at a rate of 33 cc. per minute show rapid absorption in three hours, no irritations or local reactions, no failure of absorption and a negligible amount of pain or discomfort. A comparison of intravenous, subcutaneous and intramuscular infusions is made, and the advantages and disadvantages of each route are discussed. Bovine protein hydrolysate is a safe parenteral fluid for patients who require proteins by intravenous, subcutaneous and intramuscular routes.

Urologic & Cutaneous Review, West Palm Beach, Fla.

52:249-312 (May) 1948

Modification of the Millin Technic of Extravesical Suprapubic Prostatectomy. P. Pieraccini.—p. 249.
Unusual Pathogenetic, Clinical and Diagnostic Aspects of Some Hydronephroses. G. D'Errico.—p. 252.
*Streptomycin in Treatment of Tuberculosis and Mixed Infections of Genito-Urinary Organs. F. H. Redewill and J. E. Potter.—p. 259.
Evolution in Renal Surgery. A. Babics.—p. 268.
Streptomycin and the Urologist. J. C. Negley and E. Rogen.—p. 272.
Sex in Man. J. F. McCahey.—p. 273.
Infection of Upper Urinary Tract During Pregnancy and Puerperium. A. C. Butts.—p. 288.

Streptomycin in Tuberculous and Mixed Infections of Genitourinary Organs.—Redewill and Potter review the literature and their own experiences with antibiotics and chemotherapeutic substances in the treatment of infections, particularly of tuberculosis of the genitourinary tract. Dosage of streptomycin should be small in treating infection of genitourinary organs because antibiotics are rapidly excreted by the kidneys and 1 Gm. daily produces 100 micrograms per cubic centimeter, which is ample to check infections. Streptomycin has a delayed sustained action if given only twice a day for forty-five to sixty days, with two to three weeks' vacation, provided that urine is kept alkaline and there is no gross obstructive pathologic change in the urinary tract. A simplified method of antibiotic assay is reported. Penicillin will cure most coccic infections; streptomycin mostly gram-negative rod and coccic as well as tuberculosis infections. Penicillin and streptomycin are symbiotic. Still greater symbiosis exists between penicillin and sulfadiazine and streptomycin and the sulfones. The most active and least toxic of all is the combination of streptomycin and "promizole" (4,2'-diaminophenyl-5'-thiazolylsulfone). Iontophoresis, quartz light and vitamins are necessary adjuncts in treating tuberculosis of the urinary bladder. Vesical and other urinary tract ulceration will heal more rapidly with increased nitrogen intake if the average protein level is low. Of 22 patients with tuberculosis of the genitourinary tract, 2 showed no improvement, but the others were either improved or apparently cured. This group included cases of tuberculous cystitis, nephritis and prostatitis. The authors also report 120 cases of acute and chronic nontuberculous urologic infection. Their percentage of cure and improvement was highest of any reported in the literature. They did not use streptomycin in cases in which it was to be expected that streptomycin fastness would develop, and they used in combination sulfonamide compounds, streptomycin and penicillin.

Virginia Medical Monthly, Richmond

75:325-378 (July) 1948

Pregnancy and Diabetes. W. R. Jordan.—p. 325.
Medical Practice on Virginia Peninsula Sixty Years Ago. C. D. Bradley and Miriam D. Bradley.—p. 328.
Rheumatic Diseases in Southwestern Virginia. R. E. Glendy.—p. 334.
Ocular Emergencies. W. P. McGuire.—p. 338.
*False Positive Serologic Test. J. W. Love.—p. 341.
History—Important Factor in Diagnosis of Coronary Thrombosis. E. L. Copley.—p. 346.
Primary Spontaneous Pneumothorax. A. L. Kruger.—p. 351.
Penicillin in Cardiovascular Syphilis. R. R. Porter.—p. 357.
Co-Existence of Organic and Psychosomatic Disease—Case Report. Elizabeth M. Cover.—p. 359.
Country Doctor, 1947. N. H. Wooding.—p. 361.
Foreign Body—Open Safety Pin in Esophagus of Infant—Report of Unusual Case. P. P. Vinson.—p. 363.

False Positive Serologic Reaction.—Love emphasizes that one serologic test, be it complement fixation or flocculation or precipitation, does not suffice for a diagnosis of syphilis. The test is subject to error, human, inherent, and of interpretation. Most biologic false positive reactions will be encountered in the following circumstances: (*a*) There has been vaccination for smallpox within the three preceding months, especially with "take." (*b*) Certain febrile diseases, the more important of which are malaria, infectious mononucleosis, virus pneumonia, influenza and mumps. Many other diseases are capable of producing biologic false positive serologic reactions, but are of less importance because of the uncommonness of the disease itself or a small incidence of false positive reactions resulting therefrom. Included in this latter group are typhus, leprosy, chancroid, lymphogranuloma venereum, Weil's disease, relapsing fever, rat bite fever, Rocky Mountain spotted fever, disseminated lupus erythematosus and septicemia. The author discusses technical errors, false positive reactions of the newborn, paradoxical false positive reactions and the general biologic false positive reaction in spirochetal, virus and other diseases. False positive serologic reactions in the spinal fluid have been reported in brain tumor, encephalitis and malaria and mumps. These are rather rare, especially in their relationship to false positive reactions in the blood.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

56:317-376 (June) 1948

*Usual and Unusual Findings in Cervix Uteri at Time of Repair Immediately Following Delivery: Preliminary Report. M. V. Sheets.—p. 317.
Six Cases of Primary Carcinoma of the Fallopian Tube. L. A. Emge.—p. 334.
Effect of Sex Steroids on Experimental Goiter and Iodine Storage in the Thyroid. F. X. Gassner, H. W. Barrett and R. G. Gustavson.—p. 346.
Pfannenstiel Incision for Cesarean Section. D. W. DeCarle and R. B. Durfee.—p. 360.
Technic of Subtotal Thyroidectomy. E. R. Sanderson.—p. 365.
Painful Motions of Thumb: Stenosing Tenosynovitis of Flexor Pollicis Longus. D. C. Hucherson and F. R. Denman.—p. 370.

Postpartum Cervix.—Sheets examined microscopically small pieces of tissue from cervix uteri, removed in the course of repair immediately following delivery in 200 consecutive cases. Decidual reactions occurred in 40 per cent of the specimens. Portions of Gartner's duct were observed in specimens from the cervical rim in 2 per cent of all instances. Proliferation of unripened squamous cells, marginally invading columnar epithelium or stroma, was seen at a rate of 12 per cent and produced patterns described by Novak as "epidermization." "Metaplasia," or rather atypical abberant epidermoid epithelium, appeared in glands or in areas replacing surface columnar epithelium or in continuation of normal squamous epithelium with sufficient frequency (71 per cent) to be considered as not unusual during pregnancy. Benign hyperplasia was observed in less than 10 per cent of all specimens. Intraepithelial preinvasive cancer occurred only in the presence of invasion in other parts of the specimen. Clinically unsuspected, grossly not demonstrable invasive carcinoma of the cervix uteri occurred twice in a series of 200 cases. No clinical symptoms appeared in these histologically proved cases during six months of observation following delivery. The frequency of normal and abnormal tissue behavior in the cervix during pregnancy or immediately following delivery cannot be correctly evaluated on the basis of clinical observation alone, but requires microscopic examination.

Wisconsin Medical Journal, Madison

47:557-651 (June) 1948

Cardiac Function Test Based on Anoxia Induced by Rebreathing Air. A. A. Holbrook and H. H. Shapiro.—p. 571.
Practical Aspects of Diagnosing Brain Tumors. R. H. Quade.—p. 583.
Objectives in Management of Children with Diabetes Mellitus. R. L. Jackson.—p. 587.
Protein and Amino Acid Utilization. O. V. Hibma.—p. 590.
*Occupational Medicine, Past and Present as It Concerns Management, Worker, and Medical Department, Doctor, and Nurse Alike. E. L. Belknap.—p. 594.
So-Called "Connell Suture." F. G. Connell.—p. 599.

47:653-744 (July) 1948

Treatment of Subacute Bacterial Endocarditis with Penicillin and with Streptomycin. J. T. McCoy and O. O. Meyer.—p. 671.
Treatment of Metastatic Bone Tumors. M. I. Smedal and F. A. Salzman.—p. 675.
Some Thoughts on Surgery of Retinal Detachment. D. Vail.—p. 687.
Serology and Obstetrics. R. T. LaVake.—p. 690.
Management of Nephrotic Syndrome in Chronic Glomerulonephritis. A. W. Hilker.—p. 693.

Occupational Medicine.—Belknap shows that lead is the most common toxic dust and that mercury poisoning may mimic intestinal flu. Cadmium fumes attack the alveoli. Benzine, although a cheap solvent, is a dangerous hematoxin. Carbon tetrachloride is a fatal nephrotoxin and arsine is more deadly than cyanide. Occupational medicine is as broad as internal medicine. Physicians should familiarize themselves with the technics and hazards of industry.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Australian J. Exper. Biol. & M. Science, Adelaide

26:107-198 (March) 1948. **Partial Index**

*Pharmacologically Active Substance in Serum and Platelets Which Stimulates Suprarenal Medulla. G. Reid.—p. 107.
Metabolism of Erythrocytes: I. Respiration in Absence and Presence of Methylene Blue. P. M. Nossal.—p. 123.
Possibility of Dual Nature of Sympathetic Ganglion Cells. F. H. Shaw, Patricia Keogh and Monica MacCallum.—p. 139.
Pharmacology of Quinine Methiodide. F. H. Shaw, Patricia Keogh and Monica MacCallum.—p. 147.
New Therapy of Ophidiasis. E. R. Trethewie and A. J. Day.—p. 153.

Substance in Serum and Platelets That Stimulates Suprarenal Medulla.—Reid found that in the serum of the cat and in extracts of the buffy coat of horse blood there is a diffusible, relatively heat-stable substance which, when injected into the arterial supply of the adrenal gland of the cat, causes an increase in blood pressure and heart frequency and contraction of the denervated nictitating membrane. These effects are due to the liberation of epinephrine from the adrenal gland. The active substance acts directly on the cells of the medulla and not through the preganglionic fibers. The activity cannot be attributable to histamine, potassium, adenyl compounds, hydroxyphenethylamine or a choline ester.

British Journal of Ophthalmology, London

32:321-384 (June) 1948. **Partial Index**

Ox Vitreous Humor. 1. Residual Protein. A. Pirie, G. Schmidt and J. W. Waters.—p. 321.
Variation of Pupil Size with Change in Angle at Which Light Stimulus Strikes the Retina. K. H. Spring and W. S. Stiles.—p. 340.
Apparent Shape and Size of Pupil Viewed Obliquely. K. H. Spring and W. S. Stiles.—p. 347.
Alteration in Size of Normal Optic Disk Cup. R. Pickard.—p. 355.

British Journal of Surgery, Bristol

35:337-456 (April) 1948

Study in Intravascular Thrombosis with Some New Conceptions of Mechanism of Coagulation. H. Cummine and R. N. Lyons.—p. 337.
Surgery of Duodenal Ulcer. C. Wells and A. C. Brewer.—p. 364.
Some Interesting Gastrojejunal Lesions. J. Moroney.—p. 374.
Surgical Treatment of Anastomotic Ulcer: Analysis of 38 Cases. F. S. A. Doran.—p. 377.
Important Anomaly of Right Hepatic Duct and Its Bearing on Operation of Cholecystectomy. M. Paul.—p. 383.
Occult Bone Metastases. R. Shackman and C. V. Harrison.—p. 385.
Whole Skin-Graft Repair of Inguinal Hernia: Account of 163 Operations, with Follow-Up of 136 Operations at 12 Months. C. M. Marsden.—p. 390.
Indirect Inguinofemoral Hernia. T. A. Quilliam.—p. 395.
*Trauma of Hand. J. McK. Duncan.—p. 397.
Perirenal Tumors with Report of Further Case of Perirenal Fibrosarcoma. H. G. Hanley.—p. 406.
Osseous Dystrophy with Many Pseudo-Fractures. J. F. Curr.—p. 411.
Rehabilitation of Fractures. J. J. R. Duthie, J. G. Macleod and R. J. G. Sinclair.—p. 414.
Epiphrenic Diverticulum of Esophagus with Report of Case Treated Surgically. W. R. Forrester-Wood.—p. 418.
Foreign Body Perforations in Meckel's Diverticulum. D. A. MacFarlane.—p. 421.
Chronic Thyroiditis: Case Showing Features of Both Riedel's and Hashimoto's Thyroiditis. W. R. Merrington.—p. 423.
Carcinoma in Thoracic Stomach (Congenital Short Esophagus). R. Mailer.—p. 426.
Paralaryngeal Actinomycosis: Report of Early Case with Short Review of Condition. P. Childs.—p. 429.

Trauma of Hand.—Duncan reports on 42 consecutive cases in which flexor tendons were divided within their sheaths. Here primary repair holds out infinitely better prospects of functional recovery than delayed procedure. If repair of a divided tendon is delayed six months or more the muscle belly of that tendon may have undergone such changes that repair by graft may offer little prospect for good function. It is wise under these circumstances to transplant to the damaged finger a tendon with a fully functioning muscle belly. He also reports on tears of the extensor tendons around the terminal interphalangeal joint. The loss of controlled apposition of the pulp of the index or middle finger to the pulp of the thumb is a handicap to any precision worker. In the middle and little fingers the loss of terminal joint movement adversely affects the power of grip so essential to heavy work. This report is based on experience in treating 60 of these injuries. Open operation on the tears has revealed *two main groups of mallet finger:* 1. The tendon insertion at the dorsal margin of the base of the terminal phalanx is avulsed with a fragment of bone. 2. The nonfracture type of mallet finger is caused by a tear of the extensor tendon at some point between its insertion and the triangular fascia of Bunnell. In mallet finger the flexion deformity of patients with synovial damage was roughly twice that of those that had not. The amount of active movement recovered was on the average 20 per cent higher in cases in which there was no damage to the synovium. The operative technic of treating mallet fingers, based on the recognition of the different types of lesion, can offer the patient a useful finger with the minimal degree of flexion deformity.

British Medical Journal, London

1:1061-1120 (June 5) 1948

Lipotropic Factors in Experimental Cirrhosis. E. A. Sellers, C. C. Lucas and C. H. Best.—p. 1061.
Pneumoconiosis of Coal Miners. C. M. Fletcher.—p. 1065.
Intestinal Lesions in Malignant Hypertension: With Report of Case. G. J. Cunningham.—p. 1075.
*Siliceous Granuloma Due to Talc: Case of Post-Operative Peritoneal Adhesions. W. A. Mackey and J. B. Gibson.—p. 1077.
*"Tuberculosis" (Coexistent with Carcinoma of Uterus) Shown to Be Siliceous Granuloma. G. H. Smith.—p. 1078.
Siliceous Granuloma Due to Surgical Talc as Cause of Peritoneal Adhesion. W. Walker.—p. 1079.
Liver in Infective Hepatitis. K. Damodaran.—p. 1079.
Torula Histolytica Infection of Central Nervous System. F. R. Magarey and P. H. Denton.—p. 1082.

Postoperative Adhesions Caused by Talc.—Mackey and Gibson report the case of a woman, aged 74, in whom splenectomy was followed thirteen days later by a second operation because of continued bleeding into the alimentary tract. The second operation disclosed extensive dense adhesions. Histologic evidence is presented that these arose as a result of deposition of small amounts of talc at the time of the first operation.

Suspected "Tuberculosis" Proved to be Siliceous Granuloma.—The case presented by Smith had been reported previously as an example of a rare coexistence of carcinoma and tuberculosis in the same organ. The diagnosis of tuberculosis was made on histologic grounds, despite failure to demonstrate acid-fast organisms in the sections. Roberts in 1947 proved that granulomas occurring in the fallopian tube, with a histologic picture closely resembling tuberculosis, may be siliceous and not tuberculous: these foreign body granulomas apparently follow the introduction of talc (surgical gloves) into the peritoneum. Smith reinvestigated his case and gained the impression that the original diagnosis of tuberculosis was inaccurate and that of siliceous granuloma more likely. The patient had undergone appendectomy five months prior to hysterectomy for carcinoma of uterus. Microscopy revealed the presence in the fallopian tube of a pseudotuberculosis granuloma with giant cells containing doubly refractive material, almost certainly surgical talc.

Journal of Royal Army Medical Corps, London

90:133-174 (April) 1948

Health Education in the Army. H. J. A. Richards.—p. 133.
Curare as Adjuvant to Anesthesia in Military Practice. W. H. Scriven and K. F. Stephens.—p. 149.
March Hemoglobinuria: Review. M. Lubran and J. Sakula.—p. 155.
Morbid Conditions of Knee-Joint in East African Askaris with Particular Reference to Etiology and Pathology. H. B. Young.—p. 161.

90:175-218 (May) 1948

Effects of Heat with Special Reference to Its Occurrence in British Troops in Persian Gulf Area in 1941-2. W. Stewart.—p. 178.
*Traumatic Arteriovenous Fistula: Treatment and Results. J. M. Matheson.—p. 194.

Traumatic Arteriovenous Fistula.—Twenty-six patients with traumatic arteriovenous fistula were admitted to a peripheral vascular and nerve injuries unit in Edinburgh between 1942 and 1946. There were twenty-seven fistulas in 26 patients. An important factor in the diagnosis was the changes that were elicitable in pulse rate and diastolic blood pressure on digital occlusion of the fistula. The heart was not, as a rule, enlarged, though a postoperative diminution in size was observed. Operative closure of the fistula was delayed until the collateral circulation was established and adequate. The usual operation was quadruple ligation and excision of the sac, and an associated nerve injury, if present, was dealt with at the same time. The late results of treatment are considered in 23 patients who, with one exception, were gainfully employed. Good functional results were seen in the cases involving a lower limb, in which the peripheral pulses returned whatever the level of arterial ligation. Some patients had intermittent claudication of moderate degree, and a few had residual swelling, probably due to venous obstruction. In the cases involving the neck the residual headache and giddiness could not be explained satisfactorily. The results in the upper limbs were complicated by the associated nerve lesions. The real evidence of successful treatment will probably be obtained in ten to twenty years' time, when the vessels begin to lose their resilience.

Lancet, London

1:853-892 (June 5) 1948

Vitamin-C Requirement of Human Adults: Experimental Study of Vitamin-C Deprivation in Man. R A. Peters and other members of Vitamin-C Subcommittee of Medical Research Council.—p. 853.
*Residual Symptoms in Graves' Disease After Thyroidectomy. L. Martin.—p. 858.
Floss-Silk Lattice Repair for Inguinal Hernia. R. Maingot.—p. 861.
Anthisan in Treatment of Allergic Rhinitis. A. G. S. Calder.—p. 863.
Non-Suppurative Hepatitis: Report of Case. W. E. King, J. W. Perry, P. J. Parsons and M. Freeman.—p. 864.
Incidence of Chronic Hepatitis in Women in Copenhagen 1944-45. M. Bjørneboe.—p. 867.
Thrombocytopenic Purpura Due to Sensitivity to Sedormid. Stella Instone—p. 869.

Residual Symptoms After Thyroidectomy.—Martin points out that patients who have undergone thyroidectomy for Graves' disease (primary thyrotoxicosis) frequently retain symptoms such as nervousness, palpitations, sweating, tremor and lability of the pulse rate on emotion or exertion, besides some of the ocular signs of thyrotoxicosis. The symptoms are often loosely termed "residual signs of toxicity," but their origin has never been clearly demonstrated, though various causes have been suggested. The author studied 33 patients with primary thyrotoxicosis, in whom thyroid function was normal at intervals ranging from two and a half to ten years after thyroidectomy; 31 retained symptoms at the time of follow-up. Ocular signs were the only true residua of primary thyrotoxicosis. Other symptoms were attributed to constitutional factors, to the emotional effect of the disease and operation or to causes unconnected with either.

New Zealand Medical Journal, Wellington

47:83-190 (April) 1948. Partial Index

Behavior Problems in Children. S. L. Ludbrook.—p. 87.
Late Results of Gunshot Wounds of Head. H. Cairns.—p. 95.
Modern Balzac. I. M. Allen.—p. 99.
Intervertebral Disk Disease: Its Recognition and Treatment by General Practitoner. J. H. Young.—p. 106.
Problem of Neurosis in Ex-Soldiers. H. Palmer.—p. 129.
*Multiple Papillary Adenomata of Intestine. L. H. Aitken and D. B. Brown.—p. 139.
Respiratory Depression. R. H. Orton.—p. 143.

Multiple Papillary Adenomas of Intestine.—Aitken and Brown report a man, aged 39, who first presented symptoms in 1934 with the loss of "2 pints of blood" per rectum. He attributed this to prolapse of the bowel, and in reducing this "a dozen small grapelike structures" came away. From that time on he lost blood on approximately six occasions per year. In 1946 after a loss of blood he was examined by sigmoidoscope, and a large papilloma was observed in the sigmoid colon. He continued to lose blood from time to time until October 1947, when he was seized with attacks of violent colic. These attacks were unrelieved by sedatives and were followed by vomiting and dull aching pain in the region of the umbilicus. At operation slight distension of the large bowel leading to a giant papilloma (6 cm. in diameter) in the sigmoid colon was found. There was a large papilloma in the cecum (4 cm. in diameter). About the middle of the small bowel were two tumors (2.5 cm. in diameter). Three additional freely movable papillomas were palpated in the small intestine. The papilloma of the sigmoid and that of the cecum were removed and at a second operation the papillomas of the small bowel were removed. The patient recovered. The authors review the literature and stress that the incidence of papillomas in necropsies varies from 4 to 6 per cent. Such tumors are much more common in the large than the small bowel and are distributed equally between the sexes. Papillomas occur in three forms: smooth polyp, villous papilloma and intestinal polyposis. The commonest symptom is bleeding. Intestinal polyposis is a hereditary disease. Thirty per cent of intestinal papillomas become malignant. The treatment is entirely surgical and consists of either local destruction through the sigmoidoscope, enterostomy and removal of the polyp or colectomy.

Proceedings of Royal Society of Medicine, London

41:261-342 (May) 1948. Partial Index

Electronic Apparatus for Immediate Visual Recording of Pulse Rate. W. Rotheram.—p. 283.
Inhibition of Dental Caries by Fluorine. R. Weaver.—p. 284.
Electromyography. P. Bauwens.—p. 291.
Statistical Analysis of Geriatric Care. L. Cosin.—p. 333.
Old Age in General Practice. T. H. Howell.—p. 337.

Quarterly Journal of Medicine, Oxford

17:95-174 (April) 1948

*Schönlein-Henoch Syndrome (Anaphylactoid Purpura). D. Gairdner.—p. 95.
Case of Chronic Porphyria Associated with Recurrent Jaundice. C. H. Gray, C. Rimington and S. Thomson.—p. 123.
Does Sodium Salicylate Cure Rheumatic Fever? J. Reid.—p. 139.
Toxic Manifestations of Sodium Salicylate Therapy. J. D. P. Graham and W. A. Parker.—p. 153.
Experimental Observations on Chronic Agranulocytosis. G. Hickie.—p. 165.

Schönlein-Henoch Syndrome.—Of the 12 patients with the Schönlein-Henoch syndrome reviewed by Gairdner all but 1 were observed by him personally. Ten of the 12 patients were children between 4 and 15 years, and 2 were adults of 40 and 48 years. Previous authors have also found the condition predominantly in childhood. Ten of the 12 patients were male. There is a great variety in the mode of onset, and symptoms from any one of the three sites, skin, intestine or joints, may usher in the illness. A rash was present in all 12 cases. Gastrointestinal symptoms were present in all but 1 of the patients. Eleven of the 12 patients had colic; 8 had blood in the stools, and 6 had vomiting. Articular symptoms occurred in 10 of the 12 patients, varying from transient puffiness of a single joint to recurrent painful swelling of many joints. Nephritis was the most serious aspect of the condition. All except 1 patient showed some renal involvement; in 4 the hematuria was gross, and in 7 the hematuria was microscopic. The subsequent history of these patients shows that the nephritis may go on either to recovery, to latent nephritis, to chronic nephritis or to rapidly developing renal failure and death. The term Schönlein-Henoch syndrome is preferable to anaphylactoid purpura because purpura is neither uniformly present clinically nor the essential histologic feature of the exanthem. He assembles evidence to show that the Schönlein-Henoch syndrome, acute nephritis, rheumatic fever and polyarteritis nodosa together form a family of diseases. The pathogenesis common to this group is probably an antigen-antibody reaction, akin to that occurring in anaphylaxis and taking place especially in the endothelium of certain blood vessels. The commonest antigen is a derivative of the hemolytic streptococcus, although proteins derived from other organisms or from nonbacterial sources may also act. The blood vessels especially involved in the Schönlein-Henoch syndrome are the small vessels of the skin, intestine, synovia or glomeruli; in nephritis the glomerular capillaries, and in polyarteritis nodosa the medium-sized arteries and arterioles. In rheumatic fever the site of the reaction is less clear, but it is possible that here too the predominantly connective tissue damage is secondary to vascular lesions.

Transactions Royal Soc. Trop. Med. & Hyg., London

41:687-832 (May) 1948. Partial Index

Pathologic Processes in Malaria. B. Maegraith.—p. 687.
Liver Lesions in Malaria. W. H. H. Andrews.—p. 699.
Exoerythrocytic Parasites of *Plasmodium Cynomolgi*. H. E. Shortt and P. C. C. Garnham.—p. 705.
Bancroftian Filariasis: Biologic Mechanisms that Underlie Its Periodicity and Other of Its Clinical Manifestations. C. Lane.—p. 717.
Pre-Erythrocytic Development of Plasmodium Cynomolgi and Plasmodium Vivax. H. E. Shortt and P. C. C. Garnham.—p. 785.
Transmission of Kala-Azar to Australian Marsupials Trichosurus Vulpecula and Pseudocheirus Laniginosus. A. Bolliger and T. C. Backhouse.—p. 797.
Occurrence of Tick-Borne Typhus in West Africa. G. M. Findlay and G. T. L. Archer.—p. 815.
Human Dicroceliasis in Nigeria. P. J. L. Roche.—p. 819.

Acta Path. et Microbiol. Scand., Copenhagen

25:*277-404 (No. 3) 1948.* Partial Index

Capsular Antigens in Non-Hemolytic Streptococci Belonging to Lancefield Group D K. Skadhauge.—p. 308.
*Immunization of Adults Against Diphtheria with Particular Reference to Dosage and Reactions. L. Scheibel, S. Tulinius, G. Rasch and others.—p. 319.
Preparation of Formalinized Aluminiumhydroxide Vaccine with Murine S. K. Poliomyelitis Strain (Jungeblut and Sanders). A. Frantzen.—p. 351.
Mice Immunization Tests with Various Poliomyelitis Vaccines and Serums. F. Kauffmann and A. Frantzen.—p. 356.
Studies in Gram-Negative Anaerobes. S. D. Henriksen.—p. 363.
Some Investigations into Penicillin Sensitivity of Human-Pathogenic Actinomycetes and Some Comments on Penicillin Treatment of Actinomycosis. P. Holm.—p. 376.

Immunization of Adults Against Diphtheria.—Scheibel and his associates point out that during the war the character of diphtheria changed in Denmark in that it not only became more virulent and had a higher mortality rate, but it also attacked proportionately more adults. It is assumed that the change in the ratio of the morbidity in adults to that in children is connected with the widespread immunization of children and the much lower incidence of immunization in adults. This explanation is further supported by the fact that almost all those who contracted diphtheria during the past few years either were not immunized or had not completed the immunization. The authors tried to learn: 1. Does immunization with four doses of 0.2 cc. give the same result as immunization with two doses of 1 cc., although the total antigen content is thereby reduced from 50 to 20 Lf units? 2. In cases in which it is necessary to employ a milder course, will it suffice by changing the intervals to give three injections of 0.2 cc. instead of four? 3. Can the usual routine dose be reduced from 1 cc. to 0.5 cc.? 4. Do the reactions decrease according to the size of the dose? On the basis of their observations the authors answer the first three questions in the affirmative. With regard to question 4 they found that severe reactions do diminish with decreasing doses, but this is only demonstrable in the group most likely to have reactions, and only when the dose is reduced to 0.2 cc. Accordingly, the ordinary routine method to be used hereafter by the authors will be twice 0.5 cc.—i. e., twice 12.5 Lf units—with a four week interval, and a year later another 0.5 cc. When smaller doses are indicated, three times 0.2 cc.—i. e., three times 5 Lf units—*at two week intervals* will be given, and a year later another 0.2 cc. The investigations suggest that the dose for mass immunization would eventually be diminished to twice 0.2 cc. followed a year later by a third injection of 0.2 cc.

Klinische Wochenschrift, Heidelberg

26:193-224 (April 1) 1948. Partial Index

Physical Factors Influencing Urinary Secretion. K. E. Rothschuh.—p. 195.
*Changes in Ovarian Function Induced by Thiouracil and Methylthiouracil. R. Kopf, A. Loeser and G. Meyer.—p. 202.
Edematic Disturbances and the Flocculation Test of Gros. E. Freund.—p. 206.
Practicability of Various Methods for Determination of Vitamin B_1 Deficiency. W. Droese.—p. 210.
Etiology and Therapy of Intoxication by Methyl Alcohol. E. Keeser and J. Alberty.—p. 212.

Ovarian Disturbances After Thiouracil and Methylthiouracil.—Kopf and his co-workers found in experiments on rats that thiouracil and methylthiouracil cause changes in the maturation of the ovum which become manifest in the form of irregularities in the estrous cycle; estrus becomes less frequent. These experiments on animals are corroborated by observations on human subjects. Here, too, changes in the menstrual cycle develop under the influence of antithyroid substances. Menstruation has been known to become less frequent during treatment with methylthiouracil; cases have also been observed in which existing menstrual disturbances become regulated. This becomes understandable when it is recalled that transitions exist between *stimulating and injurious effects* of thyroid substances on the ovary. Menstrual anomalies seem to be elicited not by a definite thyroid disturbance but by the manner and degree of the changes produced in the ovary under the influence of the thyroid hormone. The authors believe that the changes in ovarian function which follow medication with the thiouracils are the result of the simultaneous existence of insufficiency and hyperfunction of the thyroid.

Nordisk Medicin, Stockholm

38:919-966 (May 7) 1948

Psychosomatic Problems. Review. J. C. Whitehorn.—p. 919.
*Psychology versus Anatomy in Gymnastic Treatment of Brachial Neuroses and Like. I. Movement, Emotion and Posture. II. Respiration, Emotion and Words. T. Braatøy.—p. 923.
*Urethane Treatment in Leukosis. One Year's Experience. P. B. Hansen.—p. 930.
Aortography. G. Runström.—p. 934.
Psychosomatic Diseases in Children. S. Gunnarson.—p. 937.

Psychology versus Anatomy in Gymnastic Treatment of Brachial Neuroses and the Like.—Braatøy says that myalgia from overwork occurs predominantly in the antigravity musculature, as seen in office workers who use typewriters and other equipment placed too high for them. Rest from work, massage of the painful muscles and simple relaxation gymnastics are the rational therapy in these cases. Almost identical symptoms may be observed in patients not under similar working conditions when the antigravity muscles are used to check or lock the emotional reaction, as is more readily recognized if the patients are examined in a recumbent position, when the antigravity muscles have no physiologic functon to perform. If by suitable technic the hypertension in the antigravity muscles *is released emotional explosions will be released at the same* time. The release of emotional outbursts in myalgias given gymnastic treatment is preceded or accompanied by respiratory release. When such tensions have been fixed for a long period of time they characterize the patient's attitude, gestures and utterances. Series of ailments can be seen which range from myalgias due to overwork through conditions of blocked-up emotions requiring respiratory and emotional release to chronic entangled neuroses calling for systematic psychoanalysis.

Urethane Treatment in Leukosis. One Year's Experience.—Definite but transient improvement was seen in 15 out of 23 patients, mostly with chronic lymphatic leukosis, after treatment with urethane. *Half a year after treatment only* 4 patients continued improved; 10 patients died during the first half-year. In evaluation of the results improvement in the general condition, disappearance of splenic and glandular enlargement and normalization of the blood picture must be considered, *in the order named. The sedimentation reaction and as far as* possible variations in basal metabolism are also followed. The treatment must be highly individualized. The effect of treatment with urethane in chronic leukosis, though like that following roentgen therapy, is as a rule of shorter duration and the by-effects are often more prominent. In suitable cases the treatment can be tried if for some reason roentgen treatment is not desirable, but the author has returned to roentgen therapy as the normal method after one year's test of treatment with urethane. In acute leukosis, in which roentgen treatment is most often contraindicated, treatment with urethane should be attempted if the patient is not too debilitated; transient improvement may result. In the terminal stages the effect of the two methods is about equally slight. There is every reason to continue the study of urethane and its problems. It is still in the experimental stage and only its relative harmlessness justifies its application in the clinic at this time.

38:*967-1010 (May 14) 1948.* Partial Index

*Vitamin D_2 Therapy in Lupus Vulgaris. Review. O. Strandberg.—p. 967.
*Streptomycin Treatment of Infections of Urinary Tract. A. R. Frisk.—p. 976.
*Streptomycin Treatment: Classification of Reports on Cases Treated to Date in Sweden. G. Lindgren and Björn Sjögren.—p. 980.
Blood Sedimentation Reaction in Normal Men and Women from Statistical Viewpoint. G. Dahlberg.—p. 985.
Streptomycin Treatment in Alcaligenes Meningitis. H. Jelke.—p. 989.

Vitamin D_2 Therapy in Lupus Vulgaris.—Preliminary results of treatment according to Charpy in 26 patients with lupus of the mucous membrane are reported by Strandberg. In most cases the serum calcium was increased and in more than half the cases the weekly microscopic examination of the urine revealed red blood corpuscles, usually several times. Transient albuminuria appeared in one case; in another grave persistent nephropathy developed after four weeks' treatment with irradiated ergosterol preparation and has continued for *over three months with constant albuminuria and increased* blood pressure. In 3 patients there was a peculiar eye disorder not previously described in the literature, marked by hypertrophy of the conjunctiva, with some sensitiveness to light and a feeling of foreign bodies in the eyes; the symptoms disappeared when irradiated ergosterol was discontinued. To date no improvement in the mucous membrane has been seen. Vitamin D_2 therapy does not seem to act on lupus of the mucous membrane as it does on lupus of the skin. Because of the necessary laboratory examinations, the troublesome diet and the risk involved, hospitalization is required during the treatment.

Streptomycin Treatment of Infections of Urinary Tract.—Frisk reports on 27 cases of chronic infection of the urinary tract due to bacteria susceptible to streptomycin and wholly or partly resistant to penicillin and sulfonamide drugs. Streptomycin was used, and in 20 cases treatment with alkali was given simultaneously. The results were good in 20 cases, transitory in 2 and poor in 5. With an alkali reaction in the urine the chance of successful therapy is enhanced and there seems to be less danger of the development of resistance to streptomycin. In 4 cases recurrence set in after one to three months; on repeated treatment the urine became sterile again in 2. In most cases in which the urine became sterile sterilization occurred within twenty-four hours, and in no case later than after seventy-two hours. Anatomic defects and injuries and mixed infections lessen the possibility of good results, but attempted treatment with streptomycin is considered justifiable in these cases. Of the 18 patients at present free from bacteria 13 have been observed for over three months. In 3 patients, only 1 of whom was treated with alkali, resistance to streptomycin developed during the treatment. The fastness seems to be definite. In 1 of the cases, followed for a year, resistance continues. In 2 instances grave vestibular disturbance occurred after six days' treatment, which has now lasted for three weeks and two and a half months, respectively.

Streptomycin Treatment: Classification of Reports on Patients Treated in Sweden.—Lindgren and Sjögren discuss 290 of the 350 cases in Sweden in which this treatment was used up to December 1947. The main indications for treatment were infections of the urinary tract due to bacteria susceptible to streptomycin and Pfeiffer's and tuberculous meningitis. The cases of infections of the urinary tract were mostly of long duration and refractory to other treatment; recovery followed in 68 per cent of the uncomplicated, 44 per cent of the complicated cases. In 10 of 29 cases of tuberculous meningitis the prognosis seems favorable. Eighteen of 22 patients with Pfeiffer's meningitis recovered. Total dosage of more than 15 Gm. gave better results than a lower dosage. When bacteria are demonstrable in the urine after seventy-two hours the prospect of overcoming the infection is slight. Complications of different kinds were seen in about one fourth of the cases. Vestibular complications occurred in 50 cases (17 per cent); their frequency increases with the dosage.

Presse Médicale, Paris

56:437-456 (June 23) 1948. Partial Index

*Thymectomy with Parathyroidectomy in Ankylotic Polyarthritis: Case Followed for 9 Years. R. Leriche.—p. 437.
Collapse of Pulmonary Cavities Associated with Miliary Infection, Bronchopneumonia and Tuberculous Infiltration in Course of Streptomycin Treatment. C. Mattel, M. Tristani, P. Balozet and others.—p. 438.
Clinical Investigation and Arteriography in Arteritis of Lower Limbs. L. Bazy, J. Huguier, H. Reboul and others.—p. 442.
Bronchial Obstruction in Newborn Child: Intra-Uterine Suffocation. L. Derobert.—p. 444.
Eosinophylic Granuloma of Skin. J. Guilhon, P. De Graciansky and A. Paraf.—p. 448.
Radiography of Volvulus of Sigmoid Flexure. C. Olivier.—p. 452.
Tomography of Aorta. Even, Lepennetier, Morin and others.—p. 454.

Thymectomy with Parathyroidectomy in Ankylotic Polyarthritis.—Leriche points out that if ankylosing arthritis involves only one joint, treatment by resection is possible, but if many joints are ankylosed, including those of the spine, only an operation that has a general systemic effect is justified, such as Oppel's parathyroidectomy. In 1928 Oppel reported that he had obtained improvement in 16 of 50 patients with ankylosing polyarthritis. Leriche performed Oppel's operation for the first time in 1928 and obtained spectacular success in a man who had been bedfast for a number of years. Since then the author has performed three or four parathyroidectomies for ankylosing polyarthritis every year. The majority of these patients have been followed for two or three years; in about half of them the improvement has proved lasting. The author also has had some failures, as have others who have employed this treatment. In 1936 the author combined parathyroidectomy with removal of a persisting thymus. Since then he has always searched for a persistent thymus in these patients and has found that the thymus frequently encloses one or two parathyroids. He reports the case of a man in whom thymectomy and parathyroidectomy was done in 1938 and who has been followed for nine years. The results were good. The author deplores that little attention has been given to his repeated reports on the favorable results of parathyroidectomy and thymectomy. He employs sympathectomy in cases of arthritis deformans.

56:457-468 (June 26) 1948

Experimental and Clinical Study on Choleretic Action of a New Derivative of Sulfur. R. Kourilsky, B. Halpern and J. Martin.—p. 457.
*Treatment of Scabies with DDT. G. Garnier.—p. 458.

Treatment of Scabies with DDT.—Garnier says that since 1945 he has treated hundreds of patients, including young children, with a 6 per cent solution of dichlorodiphenyltrichloroethane (DDT) in an ointment base which is adherent, colorless and odorless. There were no signs of intolerance or toxicity and the treatment failed in only about 2 per cent of the patients. These favorable results are in contrast with those obtained by American and British authors, who not only failed to observe therapeutic and prophylactic results in scabies, but also called attention to the danger of intoxication and irritation involved in the use of DDT for scabies. Garnier says that if such undesirable effects occur, it is because the solvent in which DDT was applied was acetone, which facilitates cutaneous absorption. Since DDT is effective on contact, absorption is useless and not desirable. In the morning, after a soapy bath, the entire body, except the head, is painted with a 6 per cent solution of DDT in phthalic ethers. A second coat is applied ten minutes later. The patient then puts on his clothes. On the following morning the patient is given another soapy bath and all the underwear as well as the bed linen is changed.

Revista Argentina de Cardiología, Buenos Aires

15:1-36 (Jan.-Feb.) 1948

*Action of Precordial Anesthesia on Pain and Electrocardiographic Changes of Angina Pectoris. L. Del Zar and J. Bronstein.—p. 17.
*Thiouracil in Therapy of Angina Pectoris and of Cardiac Insufficiency. B. Moia and J. Bronstein.—p. 25.

Precordial Anesthesia in Angina Pectoris.—Del Zar and Bronstein studied the effect of subcutaneous procaine infiltration of the precordial region on pain and the electrocardiographic changes caused by exertion in 22 patients with angina pectoris due to coronary sclerosis. There was exertion before and again five minutes after anesthesia. All patients had been given a clinical and an electrocardiographic diagnosis. Exertion elicited appearance of anginal pain in 10 cases, in 7 of which pain was either controlled or attenuated by procaine infiltration. In 1 case pain was elicited by effort after procaine infiltration anesthesia and not before it. Exertion produced changes of pathologic type in the electrocardiograms of 18 patients. Anesthesia failed to prevent or even to improve the electrocardiographic changes even in the cases in which pain was attenuated or suppressed by it. The authors conclude that subcutaneous procaine infiltration anesthesia of the precordial region either favorably modifies or controls anginal pain caused by exertion. However, it does not modify the changes in the electrocardiograms caused by exertion. These results suggest the value of precordial procaine infiltration as symptomatic therapy of anginal pain.

Thiouracil Therapy in Angina Pectoris and Cardiac Insufficiency.—Moia and Bronstein review the literature and give the results of their own observations. They observed a case of diffuse edema which appeared on administration of a thiouracil derivative and disappeared on discontinuation of the drug, frequent failure of the drug in angina pectoris and in cardiac insufficiency and sudden death after improvement in a patient with angina pectoris and aortic stenosis. They conclude that thiouracil should not be used in routine therapy for either angina pectoris or cardiac insufficiency. The drug is of value in selected cases, especially when the basal metabolism is initially high. Its administration should be discontinued if clinical improvement is either moderate or transient. Retention of water in cardiac insufficiency is a contraindication because of the danger of acute edema of the lung.

Schweizerische medizinische Wochenschrift, Basel

78:605-628 (June 26) 1948. Partial Index

*Streptomycin Used for 18 Months in a Tuberculosis Sanatorium: Results in 170 Cases. E. Mordasini.—p. 605.
Two Injuries Caused by Sports. J. Heer.—p. 612.
Examination of Uncovered Slides with Cell Smears by Means of Dry Systems: Microscopic Technic. H. Scholer.—p. 613.
Action of Coagulation Promoting Phospholipoids and Calcium Chloride on Heparin During Coagulation of Blood and Plasma in Vitro. F. W. Kahnt.—p. 614.

Streptomycin in Tuberculosis Sanatorium.—Mordasini says that at two tuberculosis sanatoriums in Davos 170 tuberculous patients have been treated with streptomycin. Streptomycin is definitely indicated in the presence of acute hematogenic dissemination and in tuberculous meningitis. Such cases are generally seen and treated in hospitals, not in sanatoriums, but even for physicians on staffs of sanatoriums streptomycin is a valuable addition to the therapeutic armamentarium. The use of streptomycin has changed little in the established methods of sanatorium cure and in collapse therapy. The greatest value of streptomycin therapy is in making it possible to operate on many patients who otherwise could not be subjected to collapse therapy. The knowledge that there is a therapeutic weapon which is of great help in bronchogenic and hematogenic dissemination, particularly during surgical interventions either on the lungs or other organs, such as the kidneys, gives the physician a greater feeling of security and more freedom of action.

78:629-652 (July 3) 1948. Partial Index

*Diagnosis and Treatment of Arteriovenous Aneurysm in Area of Hemispheres of Cerebrum. G. Weber.—p. 629.
*Etiology of Myeloid Leukemia from Point of View of Diaplacental Transmission. Kucharick.—p. 634.
Erosion of Eyes Caused by Calcium Spray. G. Papayannopoulos. —p. 635.

Arteriovenous Aneurysms in Cerebral Hemispheres.—Weber reports 15 cases of cerebral arteriovenous aneurysm in 10 men and 5 women treated at the neurosurgical clinic in Zurich. Symptoms of the disturbance were manifested at an early age, in 14 of the patients between the eighth and the twenty-eighth year. One patient only was 36 years old when first clinical symptoms were manifest. Four patients had epileptiform attacks only. Four patients had recurrent subarachnoid hemorrhages with or without hemiparetic symptoms. Six patients had epileptiform convulsions as well as recurrent subarachnoid hemorrhages. One patient, a girl aged 9, had monthly migraine with nausea, vomiting and a slowly progressing left hemiparesis. Four of the 15 patients complained spontaneously about an intracranial bruit, and a sound synchronous with the pulse was heard on auscultation of the head. Encephelography was performed in 11 patients, in 5 of whom the ventricular system extended toward the area of the vascular tumor; a displacement of one of the ventricles was demonstrated in 1 patient. In the remaining 5 patients the observations were doubtful. Diagnosis can be established by cerebral arteriography in the absence of aneurysmal bruit, enlargement of the heart and hemilateral exophthalmos. Treatment consisted of ligation of the internal carotid artery in 12 patients, in 10 of whom it was combined with roentgen irradiation. Roentgen irradiation alone was done in 1 patient and extirpation of the tumor in 1. In the majority of cases ligation of the internal carotid artery combined with roentgen irradiation may be considered the method of choice, while surgical removal of the tumor is indicated only in a few cases with particularly favourable location of the aneurysm.

Etiology of Myeloid Leukemia.—Kucharick reports 1 case of myeloid leukemia in a woman aged 37 who died seventeen days after the delivery of a full term infant girl whose weight was about 1,900 Gm. (4 pounds). The baby was emaciated but was normal from the hematologic point of view. It was concluded that either the placenta or the organism of the newborn had resisted the development of the disease, independently of whether one considers virus or neoplasm as the etiologic factor in leukemia. The author's case and similar cases in the literature clarify the problem of leukopoiesis so far as they suggest that any part played by the humoral leukopoietic substance may be excluded with regard to the pathogenesis of myeloid leukemia.

Semaine des Hôpitaux de Paris

24:1511-1532 (June 22) 1948

Biologic Introduction to Study of Agents Analogous to Yperite (Substances Called Nitrogen or Sulfur Mustard). L. Justin-Besançon, S. Lamotte-Barrillon and C. Polonovski.—p. 1511.
*Critical Study of Clinical Results Obtained at Time of Treatment of Forty Patients with Malignant Hemopathies by Administration of Nitrogen Mustard. L. Justin-Besançon, S. Lamotte-Barrillon and C. Polonovski.—p. 1518.
First Results of Biologic Research Obtained in Course of Therapeutic Study of Derivatives of Yperite. L. Justin-Besançon, S. Lamotte-Barrillon and C. Polonovski.—p. 1529.

Nitrogen Mustard for Treatment of Malignant Hemopathies.—Justin-Besançon and his co-workers treated 40 patients, 25 men and 15 women between the ages of 9 and 70 years, who had malignant hemopathies, with nitrogen mustard. Methyl-bis (β-chloroethyl) amine was administered by the intravenous route, a solution of 6 mg. of nitrogen mustard in 6 cc. of isotonic sodium chloride solution being used. One-tenth milligram per kilogram of body weight was injected daily in a single dose in the morning or in two fractional doses at twelve hour intervals. Smaller doses were employed in tired persons or children. The total dose of one course of treatment had never exceeded an average of 24 mg. per 60 Kg. of body weight. A second course of treatment at an interval of six to eight weeks was instituted in 5 patients with recurrences. The results demonstrated that nitrogen mustard can be considered a palliative only. There were important changes in the blood picture which differed from one patient to another. Repeated examination of the blood in the course of the treatment is required because of the risk of a toxic effect of the nitrogen mustard on the hemopoietic system. The leukocyte count decreased constantly for a week, and in rare cases for three weeks, to 2,000 to 3,000 in the absence of clinical symptoms. It then increased progressively within two or three weeks. The behavior of the red blood corpuscles was less uniform. In a number of cases the red cells showed a decrease parallel to that of the leukocytes. The anemia which was present before the initiation of the treatment subsided, suggesting that the bone marrow which was liberated from its pathologic elements was again able to assure normal erythropoiesis. Nitrogen mustard therapy should not be instituted earlier than at least two months after roentgen treatment has been terminated. Nineteen of the patients treated with nitrogen mustard had Hodgkin's disease. It is here that this agent is indicated, particularly in cases of roentgen-resistant disease, except for those in the terminal stage of the disease.

Semana Médica, Buenos Aires

55:1053-1094 (June 24) 1948. Partial Index

*Streptomycin in Tuberculous Meningitis. D. L. Gallo.—p. 1057.

Streptomycin in Tuberculous Meningitis.—Gallo reports 2 girls aged 16 and 26 years, respectively, with tuberculous meningitis. Streptomycin was given by intraspinal and intramucular injections. The younger patient received a total dose of 68 Gm. intrathecally and 78 Gm. intramuscularly. Clinical cure was attained which has persisted more than one year after discontinuation of treatment with streptomycin. There are no pulmonary lesions. The older patient received a total dose of 64 Gm. intramuscularly and 3 Gm. intrathecally. Definite improvement followed, which lasted for three months after discontinuation of streptomycin therapy. Acute symptoms including symptoms of involvement of the central nervous system appeared suddenly and terminated fatally. Necropsy revealed acute cerebral lesions. The author concludes that streptomycin is the only hope of cure for patients with tuberculous meningitis, the prognosis of which was fatal before discovery of streptomycin and is now slightly but favorably modified.

Book Notices

The Differential Diagnosis of Jaundice. By Leon Schiff, Ph.D., M.D., Associate Professor of Medicine, Department of Internal Medicine, University of Cincinnati Medical School, Cincinnati. Cloth. Price, $5.50. Pp. 313, with 39 illustrations. The Year Book Publishers, Inc., 301 S. Dearborn St., Chicago 4, 1946.

In this book, a discussion of the characteristics and classification of jaundice is followed by a presentation of the different diseases in which icterus occurs. Finally, an analysis is given of the clinical and laboratory aids helpful in the differential diagnosis of jaundice and also a detailed practical description for the performance of the commonly used hepatic tests. The latter includes a well illustrated and complete treatise on liver biopsy, one of the first in this country. The organization of the material is clear, and desired information is quickly found. The literature available at the time of the appearance of the book is thoroughly reviewed; nevertheless, the book makes for easy and interesting reading. In treating a subject such as the pathogenesis and diagnosis of jaundice, it cannot be avoided that some of the opinions given will be refuted by more recent experiences. The book clearly shows the great clinical experience and astuteness of the author and also good judgment in separating the important from less significant data. The book can be highly recommended for the practitioner because of its practical presentation and for the investigator because of the well chosen and rather complete references. It is one of the best expositions of this complicated and often discussed subject.

Medical Disorders of the Locomotor System Including the Rheumatic Diseases. By Ernest Fletcher, M.A., M.D., M.R.C.P., Physician to the Arthritis Clinic, Royal Free Hospital, London. Cloth. Price, $11. Pp. 625, with 263 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves, Baltimore 2, 1947.

This volume is almost entirely concerned with problems in the field of arthritis and other rheumatic disorders, although there are included chapters on "peripheral vascular disorders," one on "medical diseases of bone" and a chapter on "the foot." Also included are appendixes detailing data on solutions used for injections in and about joints, manipulations, epidural injections, serial plasters, optimum positions for ankylosis, technic for injections into joints and muscles, muscle-nerve testing and certain normal blood values. A major part of the volume was written by Fletcher, but several contributions of chapters on special subjects were prepared by other British writers.

The book is difficult to review, as the quality of material is exceedingly variable. Some is exceptionally good; for example, a chapter on applied anatomy of the locomotor system by G. A. G. Mitchell. A chapter on incidence and prevalence of rheumatism by Lewis-Faning reviews statistics for England and Wales but fails to mention important American and Scandinavian studies of recent years. The chapter on the treatment of rheumatoid arthritis is fragmentary and poorly balanced. Serious consideration is given to remedies long discarded as useless, including calcium iodoxybenzoate, neostigmine, colloidal sulfur, bee venom, sodium glycerophosphate. All are mentioned by the writer as having value. A section on gold therapy is included, but this is far from complete.

The subject of physical therapy in the treatment of rheumatoid arthritis is disposed of in 17 lines. Vaccine therapy for rheumatoid arthritis is given 20 lines; exercises are disposed of in a page and a half. High potency vitamin D therapy is given 2 pages without inclusion of the author's personal opinion of the value of this therapy. Treatment of Still's disease is completed in a paragraph of 6 lines.

A section on the treatment of osteoarthritis includes no mention of the use of physical therapy, although bizarre methods of therapy such as the injection of fat into joints and injections of lactic acid are treated seriously and without critical appraisal by the author. A chapter by Copeman on the subject of fibrositis presents the problem from an orthodox point of view but fails to tell the reader how this disease is to be recognized and how it may be distinguished from other forms of chronic rheumatism such as rheumatoid arthritis and osteoarthritis. The section on treatment of ankylosing spondylitis includes recommendations which, in this country at least, seem little short of amazing. The author suggests that treatment be conducted along "sanatorium lines and [that patients be] nursed on open air balconies." Opportunities to care for these cases in sanatoriums and on open air balconies are certaily not frequent in America where, excepting for unusually severe cases, most patients with spondylitis go about their business and carry on at fairly strenuous occupations while receiving treatment. The writer recommends, for spondylitis, "dairy products; plenty of first class protein . . . added vitamins are useful. . . ." In this manner the author often achieves an antique flavor in his writing but the result must be disappointing to the reader searching for a reasonable program for the treatment of these patients.

In his preface the author stresses the difficulties of preparing this volume and indicates his belief that he may have made many errors in its preparation. This suspicion appears to be justified after sober study of the book. In its present form it is not recommended as a practical reference work in this field.

Introduction to Health Education. By Jackson R. Sharman, Ph.D., Professor and Head of Department of Health Education and Physical Education, University of Alabama, Tuscaloosa. Cloth. Pp. 273. A. S. Barnes & Co., 67 W. 44th St., New York 18, 1948.

This volume is directed to school teachers, perhaps the most important group from which health education can be expected to come. The author points out that satisfactory progress in improvement of national health can come only if adequate health education is made available to children in the receptive years, before wrong ideas have been inculcated by haphazard, informal "education" on health. Sharman has made a significant contribution by providing excellent orientation for teachers and in giving specific methods for incorporation of health education into school curriculums. Due attention is given to the numerous points of contact with health education that are observed in every school or classroom operation. The author's style is conducive to easy reading. A helpful feature is a summary, a list of questions and a reference list after each chapter. This book can provide important impetus to rapid progress of health education in schools. It is recommended to teachers who are coming to grips for the first time with how to introduce health education. It is equally valuable for teachers already in this field, because of the compactness and completeness with which it reviews the subject.

Modern Trends in Ophthalmology. .Volume II. Edited by Arnold Sorsby. Second edition. Cloth. Price, $12.50. Pp. 600, with 169 illustrations. *Paul B. Hoeber, Inc.*, 49 E. 33rd. St., New York 16, 1947.

Volume I was published in 1940 in an attempt to fill the gap between the systematized knowledge found in textbooks and the ferment found in the periodic literature. In advance of one and lagging behind the other, its ill defined position shows considerable local color, so that even in the modern world there are tangible distinctions between the teaching and practice of different countries and different clinics. Contributors have been sought in three continents, and the various contributions deal, not with textbook material, but with the as yet unsystematized knowledge that is emerging from clinics, laboratories and the periodic literature. The contents of the book emphasize neither that which is already established, nor that which is as yet unformed, but indicate the emergent tendencies and formative influences. An attempt has been made to fill the many gaps in the preceding volume and to indicate the considerable developments that have occurred during the past seven years. The bibliographies are selective and are intended to serve as guides to the literature and not as exhaustive lists of references.

Section one on physiology contains 10 chapters of which two articles on electrophysiology of the retina and senescence of the eye contain considerable new knowledge not found in textbooks.

Section two contains 4 chapters on diagnostic procedures, devoted mostly to slit lamp and gonioscopic studies.

Section three, with 16 chapters on pathology, introduces some excellent material on virus affections, retinal vein changes and visual disturbances in glaucoma.

The fourth section, on treatment, contains interesting subject matter on sulfonamide and penicillin therapy, contact lens, trends in cataract surgery and the handling of burns with amniotic membrane grafts.

Section five consists of four articles on social aspects, pertaining especially to aviation medicine and the care of the blind in England and Wales.

The subject matter is written for the mature practicing ophthalmologist and will be found to be worth while reading, especially for those not conversant with the present literature.

Protomorphology: The Principles of Cell Auto-Regulation. By Royal Lee and William A. Hanson. With an appended article on "Cytotoxines;" by Prof. K. R. Victorov. Cloth. Price, $8.50. Pp. 365, with 9 illustrations. Lee Foundation for Nutritional Research, 2023 W. Wisconsin Ave., Milwaukee 3, 1947.

In the author's words: "We shall review evidence which has led us to suggest the hypothesis that the genes contain an organized assemblage of smaller units which are the determinants of individual cell morphology. For these units we propose the name 'cytomorphogen.' . . . We propose that a cytomorphogen is composed in part of still simpler and quite stable units composed principally of minerals which are the determinants for the specificity of the biologic proteins. For these basic determinants we propose the name 'protomorphogen.' We define a protomorphogen as a comparatively stable but complex group of molecules, linked together by the chemical affinities of mineral matter, which by reason of its physical and chemical structure determines the exact plan or pattern by which the component parts of a specific protein are combined."

This mineral " 'skeleton' of the complicated protein molecule" is supposed to retain its structural integrity and specificity after ashing of tissue at 300 C. and resolution to give a 10 per cent saline solution of the resulting ash. This saline solution on injection intravenously into the species of animal from which it is derived may result in shock and death in five seconds to two minutes. The hypothetic mineral protomorphogen solution is postulated to serve "as a framework upon which organic components are assembled into an antigenically active foreign protein. The serologic reaction therefore is against this protein and not directly against the ash itself."

The contradiction between these hypotheses and elementary and well established facts of chemistry on the one hand and of immunology on the other hardly need be pointed out to the informed reader. To follow their further discussion and elaboration would not serve a useful purpose. The authors have read widely, but uncritically, and the considerable body of information derivable from the literature cited seems to have undergone serious distortion through being forcibly related to the basic hypotheses as frame of reference. The reviewer fails to find justification for the book or for the experimental pursuit of the specific hypotheses proposed therein.

Index of Diagnosis (Clinical and Radiological) for the Canine and Feline Surgeon. By Hamilton Kirk, M.R.C.V.S. Third edition. Cloth. Price, $10. Pp. 600, with 321 illustrations. William Wood & Co., Mt. Royal & Guilford Ave., Baltimore 2, 1947.

The author is official veterinary surgeon to the Clayton Greyhound Stadium. His experience, that of Dr. Gerry B. Schnelle of the Angell Memorial Hospital in Boston and of others have been drawn on to help make the first two editions of the "Index of Diagnosis" popular with small animal practitioners.

The third edition of "The Index of Diagnosis" is improved by deletion of many references to treatment that appeared in the first two editions. Several new articles have been added, including Schlatter's disease, pneumothorax, epulis, pathologic fractures, osteogenesis imperfecta, kyphosis, lordosis, pigmentation, hernia, hydrops amnii, dental decay, extrauterine pregnancy, sunstroke, heatstroke and bone tumors. A number of new drugs have been added to the extended section on poisoning. The attempt to differentiate between Stuttgart disease and black tongue is still not convincing.

It is proper that the major advances in the medical sciences should be aimed at the alleviation of suffering of human beings. Most of those advances are based on work done on experimental animals, including the dog and cat. It would seem a simple task to utilize the advances gained for medicine through use of the dog and cat for the benefit of those animals. Actually the task is not simple, and whereas the dog and cat have benefited greatly from work done with them for the benefit of human beings, much of the information gained through work on the dog and cat is not realized for the benefit of those animals.

It is gratifying to note the several references to the work done on animals in medical laboratories. The most potent answer to antivivisection "forces" is the relief of suffering to dogs and cats that has been contributed by research work in medical laboratories. Indeed, the lack of reference to other important work is the chief criticism of the book. The Habel mouse test for rabies is not mentioned. The information on the prostate gland is outdated. The information on vomiting is erroneous. The author overlooked all the evidence, beginning with Magendie in 1813, that vomiting is purely a reflex phenomenon. And for species differences in vomiting he might look more fruitfully to the cardiac end of the stomach rather than the pyloric. Fox or "Fox encephalitis of dogs" is not mentioned as a disease entity.

This book is a valuable addition to the library of any veterinarian or research worker who works with dogs and/or cats.

The Skull, Sinuses and Mastoids: A Handbook of Roentgen Diagnosis By Barton R. Young, M.D., Professor of Radiology, Temple University Medical School, Philadelphia. Cloth. Price, $6.50. Pp. 328, with 141 plates. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1948.

This book present a brief but complete outline and discussion of roentgen diagnosis of the head. The arrangement of the material is somewhat unusual; on one page is presented a discussion of a particular subject, and on the opposite page is a clear reproduction of a roentgenogram, fully indexed, illustrating the points discussed. The subject of roentgenography of the head appears to be well covered.

This handbook should serve as an excellent reference book for roentgenologists and those doing only a limited amount of diagnostic work on the head. It should find a place on the shelf of every physician who attempts a diagnosis of lesions of the skull, sinuses and intracranial contents.

The reproductions are of good quality and readily understood. The concise manner of presentation and the brevity of the text recommend it.

Thromboendangiitis obliterans des Gehirns: Neurologisch-psychiatrische Syndrome. Von F. Llavero. Cloth. Price, 24 Swiss francs. Pp. 248, with 15 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; Benno Schwabe & Co., Klosterberg 27, Basel 10, 1948.

In general thromboangiitis obliterans has been considered as a disease of the extremities. Only in recent years has it been appreciated that a similar disease process may affect the cerebral vascular system. Even now this fact is not commonly recognized. This monograph is devoted to a detailed presentation and clarification of this problem. Its more important sections deal with the pathologic anatomy and the etiology; the presentation of a series of 14 cases and the analysis of the clinical picture; a discussion of the accessory diagnostic methods such as encephalography, arteriography and capillary microscopy; the examination of the fundus oculi and the spinal fluid; the differential diagnosis; the prognosis and treatment. There is an extensive bibliography, but no index.

Neutron Effects on Animals. By the Staff of the Biochemical Research Foundation. Dr. Ellice McDonald, Director, Newark, Delaware. Cloth. Price, $3. Pp. 198, with illustrations. Williams & Wilkins Co., Mt. Royal & Guilford Aves, Baltimore 2, 1947.

The staff of the Biochemical Research Foundation have recorded, in a series of articles written by various members, the results of eight years' work concerning the effects of neutron bombardment in animals. This work was done with a cyclotron built especially for biologic research and under the direction of Dr. Ellice McDonald, director of the foundation. Certain projects included in this study were done at the request of the Manhattan District. In general, the various papers present the details of changes in cellular activities following neutron bombardment. The usual laboratory animals and the accepted criteria of radiation effect were utilized. The material is presented in a clear and concise manner and should be of value to those interested in the effects of neutron bombardment.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

DIET IN ULCERATIVE COLITIS

To the Editor:—Please send the list of the dietary treatment in ulcerative colitis in the early stages. What is the present opinion of the effect of tobacco and alcohol on the condition? Is medicinal therapy indicated in these stages, and if so, what dosages of the drugs are indicated?

Matthew A. Mroz, M.D., DeLand, Fla.

Answer.—The following dietary program has served well. The activity of the disease will determine the phase of the diet on which a patient is placed.

Approximate composition of this diet (actually a variation of 10 per cent in the composition of the diet is assumed):

	Unit.	Foundation Diet	Full Diet
Carbohydrates	Gm.	195	270
Protein	Gm.	85	145
Fat	Gm.	125	215
Calories	....	2,210	3,600
Calcium	Mg.	470	1,940
Iron	Mg.	11	17
Vitamin A	I.U.	4,300	7,800
Thiamine	Mg.	1.1	2.5
Riboflavin	Mg.	1.5	4.0
Nicotinic acid	Mg.	14	18
Ascorbic acid	Mg.	25	105

The initial or foundation diet is served to patients with chronic ulcerative colitis. At the outset of a well ordered program, it is a diet low in residue. Additions of food are made as tolerated so as to increase the calories and protein as quickly as possible. One additional food as well as increased size of servings is given each day unless otherwise ordered by the physician. Protein concentrates may be used or nonfat milk solids may be added to fruit juices or milk as suggested here. In general the use of tobacco and alcohol is contraindicated in patients with active ulcerative colitis. The question of medicinal therapy is difficult to answer because new drugs are constantly coming into use. Among the sulfonamide compounds the most satisfactory ones have been phthalylsulfathiazole, 15 to 22½ grains (1 to 1.53 Gm.) every three hours, or azosulfamide ("neoprontosil"), 10 to 15 grains (0.6 to 1 Gm.) every three hours. These drugs can be given for approximately two weeks at a time for the average patient, and after a rest of a week or so they may be resumed for a similar period of two weeks. Innumerable other drugs are being used, and these will be found in current publications.

HEART BLOCK

To the Editor:—A patient with heart block has heart beats thirty-six to forty-two times per minute, and shortening of breath. The attack came on rather suddenly and has not required oxygen. Please advise treatment.

W. H. Bollinger, M.D., Charleston, Ark.

Answer.—It is important to make a differential diagnosis of the cause of the auriculoventricular block since treatment of certain underlying conditions may greatly benefit the heart block, and also important to ascertain whether the block is complete or incomplete. On the assumption that the heart block is complete because of the slow ventricular rate, ordinarily no treatment is necessary. If there are untoward symptoms due to the slow ventricular rate, therapy aimed at accelerating the rate may benefit the patient. Thus ephedrine sulfate, ¼ to ½ grain (15 to 30 mg.) three to six times daily, or "paredrine hydrobromide" (1-[para-hydroxyphenyl]-2-aminopropane hydrobromide), 20 to 40 mg. three times a day, may be given. This is especially true if Adams-Stokes attacks occur. In such instances epinephrine in oil, 1 cc. once or twice daily, may be most useful.

The dyspnea present in this patient may be due to congestive heart failure. If the heart block is complete, full digitalization may be accomplished, since the block cannot be made worse. The dyspnea may be alleviated and the heart block may even disappear on the return to a state of compensation.

"AGENIZED" FLOUR

To the Editor:—I recently read an article on the use of nitrogen trichloride ("agene" gas) in the milling and bleaching of white flour. The inference was that consumption of bread made from this flour is injurious to human beings. Any information in regard to this subject would be appreciated.

M.D., Canada.

Answer.—"Agenized" flour is a product which is produced by exposing the flour to nitrogen trichloride gas ("agene"). "Agene" was widely used in the United States for improving the baking quality of flour until recently.

In 1946, Mellanby in England reported the production of "canine hysteria" (running fits) by feeding dogs flour treated with nitrogen trichloride ("agene") and proved that the toxic element was developed in the process by the action of the nitrogen trichloride on the wheat protein. American investigators have confirmed his findings.

In all these studies the level of "agenized" flour necessary to produce a reaction in dogs is substantially higher than the level of flour which would be used in an ordinary human diet.

Dr. Elvehjem reported that experiments on 12 human beings have revealed no symptoms or encephalographic changes after eating "agenized" flour or "agenized" gluten in amounts which would unfailingly produce hysteria in dogs (J. A. M. A. **135**: 760-763, 1947).

The Food and Nutrition Board of the National Research Council stated that it feels that the use of "agene" in treating flour should be abandoned in the shortest time which is economically feasible. A more complete discussion can be found in the Nov. 22, 1947 issue of The Journal.

HOOKWORM

To the Editor:—In rural North Carolina I have seen a number of cases of young adults and children with symptoms of acute appendicitis and a history of previous similar attacks. Examination usually reveals decided tenderness over the appendix, but no rebound, rigidity or fever, a normal temperature, secondary anemia and a stool loaded with hookworm ova. I have treated these cases of hookworm conservatively. So far my results have been good. Is a diagnosis of appendicitis due to hookworm correct here? Am I justified in treating these cases conservatively? How much danger is there of rupturing the appendix with the saline purgative which follows the use of tetrachloroethylene, assuming my diagnosis is correct?

M.D., North Carolina.

Answer.—You are quite right in considering appendicitis in your differential diagnosis; however, the adult worms inhabit the small intestine and especially the middle portion, where they feed on the mucous membrane. It is generally considered that about 100 worms are necessary to produce symptoms in an average person. The predominant complaints are lassitude, fatigue, anorexia, distention and anemia. The finding of ova in the stool is definite evidence of clinical disease. Against the diagnosis of acute appendicitis is the absence of rebound pain and the presence of a normal temperature, slight or no leukocytosis, with eosinophilia in the neighborhood of 20 to 40 per cent.

The only parasites which may be found in the terminal part of the ileum and in the appendix are the whipworm (Trichuris trichiura) and the pinworm (Enterobius vermicularis), and, although they may rarely cause a fulminating type of appendicitis, they usually are associated with a more chronic form known as "wriggling appendix."

The danger of rupture of the appendix with saline purgative is virtually nil.

HYPERTENSION AND ALTITUDE

To the Editor:—Is it considered inadvisable for a person with hypertension to spend a vacation at high altitude?

M.D., New York.

Answer.—The advisability of residence at high altitudes for patients with arterial hypertension is conditioned by several variables: (1) the severity of the hypertension, including the extent of permanent arteriolarsclerotic change; (2) the age of the patient; (3) the hemoglobin content of the blood; (4) the elevation of the area; (5) the amount of physical activity to be indulged in, and (6) the rapidity of ascent. In general, it may be said that it is unwise for the hypertensive person to go to altitudes in excess of 6,000 feet if he is not accumstomed to such levels and intends to be physically active. Anoxemia is exaggerated greatly by even relatively minor degrees of anemia, and thus myocardial histanoxia is a potential hazard. Each problem should be evaluated individually; generalizations are misleading, especially when so many variables affect the prognosis.

DRUGS AND STERILITY

To the Editor:—I am treating a veteran who suffered from seizures following gunshot wounds in the head. The patient has a tantalum plate in the skull. Before beginning of treatment he suffered frequent epileptiform seizures. He was put on diphenylhydantoin sodium and trimethadione, and soon these seizures stopped. He has had no seizures for many months. For about a year he has been kept on two 1½ grain (0.1 Gm.) capsules of diphenylhydantoin sodium and one 5 grain (0.3 Gm.) capsule of trimethadione, which keeps him seizure free. He and his wife are in the middle twenties, have been married about three years and desire a child. He was examined by an eminent urologist, who told him that *while his seminal fluid contained live and active spermatozoa, they* were deficient in numbers. He was told to ask me whether the continued taking of diphenylhydantoin sodium or trimethadione would interfere with the production of the spermatozoa. I was unable to answer this question. What influence has continual medication with diphenylhydantoin sodium or trimethadione on the production of the spermatozoa?

James Watson, M.D., Lakewood, Ohio.

Answer.—According to the literature no clinical investigations have been done concerning the effect of diphenylhydantoin sodium or trimethadione on spermatogenesis. It would be well to get another seminal fluid analysis with an accurate count of the spermatozoa in the seminal fluid. It is definitely known that certain drugs, especially sex hormones, do interfere with the production of spermatozoa when used over a long period of time.

PSYCHOGENIC IMPOTENCY

To the Editor:—A man aged 43 complains of impotency lasting about ten years. He was married six years ago hoping to improve. He performs vulvar intercourse with orgasm but his wife is still virgin. The urologist says that he has no genital abnormalities, and treatment has failed with several hormones. The genitals are rather small. Psychoneurotic symptoms and neurologic abnormalities are absent. The patient has a stormy genital history, including unilateral orchitis and ulcer. He had a traumatic penile lesion in childhood and gonorrhea following the first intercourse. He had a strict moral education and has strong feeling of guilt. Before the present condition he avoided sexual activities for several months for religious reasons, and he did have a transient episode of impotence. He shows no other personality difficulties. Please suggest probable cause and most satisfactory approach to this case.

Vandick Ponte, M.D., Fortaleza-Ceará, Brazil.

Answer.—It would appear from the history that this patient's sexual troubles are on a psychogenic basis, especially since the urologist that examined him can find no evidence of genital abnormalities. On the other hand, if he has bilateral testicular atrophy, it could be that his symptoms are due to a deficiency of male sex hormone. If such is the case then intramuscular injection of testosterone propionate three times a week might be indicated. This treatment might be tried for six weeks to see whether the patient derives any benefit. If not, it should be discontinued, and the patient examined by a good psychiatrist. His wife should consult a gynecologist and have her hymen incised.

VITAMIN D DOSAGE

To the Editor:—Is 5 mg. of vitamin D excessive for patients past middle life? This seems to be about the contents of the tablets of mixed vitamins for patients who are on a restricted diet for maintenance.

M.D., Maine.

Answer.—Five milligrams (about 200,000 U. S. P. units) of vitamin D is an excessive dose for any patient except perhaps in very special circumstances. For adults the optimal amount of vitamin D, if a need exists, remains to be determined. For adults who have no opportunity for exposure to clear sunshine and for elderly persons, the ingestion of small amounts of vitamin D may be desirable. The normal requirement probably does not exceed 400 U. S. P. units of vitamin D daily and may be less.

LIVER EXTRACT IN CIRRHOSIS

To the Editor:—What is the usual duration of intravenous treatment with liver extract in hepatic cirrhosis? How long should it be continued after the patient's condition seems to have remained unimproved?

G. Bruce Lemmon Jr., M.D., Springfield, Mo.

Answer.—The only large experience with the intravenous use of liver extract in the treatment of cirrhosis has been recorded by investigators from the Rockefeller Institute (Labby, D. H.; Shank, R. E.; Kunkel, H. G., and Hoagland, C. L.: Intravenous Therapy of Cirrhosis of the Liver. J. A. M. A. **133**:1181-1190 [April 19] 1947). They found that the material used increased appetite and the intake of food, produced changes indicating improvement in various tests of hepatic function and caused a disappearance of ascites in 12 of 21 cases, with reduction in the rate of formation of ascites in 7 more cases in the same group. Even more impressive are their figures for survival; 77 per cent of the group of patients studied have survived for two years or more. Labby and his co-workers pointed out that at least a six months' trial of therapy is required to evaluate the effects of this type of treatment in so chronic and well established a disease as cirrhosis. They also have cited a case in which slight improvement was noted at the end of five months of treatment but in which formation of ascites did not cease until after thirteen additional months of treatment. It would appear from their figures that at least six months' treatment is essential for a fair trial and that under certain circumstances it may profitably be continued for a much longer period of time.

CONGENITAL DEFECT OF HAND

To the Editor:—A newborn son has a congenital defect of the right hand consisting of a webbing between the first three fingers. The webbing is palm thick at the base of the fingers and narrows down to a membrane at the proxmial interphalangeal joints. The two distal phalanges of these three fingers are about half normal size. The entire hand is somewhat smaller than the left one. My questions are these: 1. When had I best attempt surgical treatment? 2. Could I increase the size of the right hand by assiduous applications of heat over a period of years?

C. S. Dorsey, M.D., Kingston, W. Va.

Answer.—1. Generally speaking, reconstructive operations on congenital defects of the type described ordinarily are carried out somewhere between the ages of 5 and 8 years. The problem, however, must be individualized, and occasionally earlier operation might be indicated, although the procedures are usually executed with greater ease when the hand is more fully developed.

2. It is highly improbable that application of heat or any other local therapy would be of any benefit.

BACTERIOSTATIC OILS

To the Editor:—Are there any food-preserving qualities in such condiments as mustard, horseradish, and various types of peppers?

Duncan C. McKeever, M.D., Houston, Tex.

Answer.—The volatile oils found in various condiments or spices do possess bacteriostatic properties. The resistance of micro-organisms to the action of spices varies with the organism and with the spice. The decreasing order of the germicidal activity of the spice components is reported as follows: allyl isothiocyanate (mustard, horseradish) and carvacrol (caraway seeds) (equal); cinnamicaldehyde and cinnamyl acetate (cinnamon) (equal); eugenol (cinnamon, cloves); eugenol methyl ether (cinnamon, cloves), and eucalyptol (*Chem. Abstr.* **38**:4638 [Sept. 10] 1944).

The chemical constituents of pepper oils are still little known (Osol, A., and Farrar, G. E.: United States Dispensatory, ed. 24, Philadelphia, J. B. Lippincott Co., 1947) and no statements as to their bacteriostatic properties can be found, although it is quite possible that they do possess such bacteriostatic properties. No instances are known where spices are relied on as the sole preservative of foods.

SILICA HAZARD

To the Editor:—In the brewing industry, diatomaceous earth or kieselguhr is used as a filtering medium. Is there any occupational hazard in handling the powder?

M.D., Massachusetts.

Answer:—The content of silica in diatomaceous earth is in excess of 80 per cent. The greater portion of this content represents free silica, the source of silicosis. Much of diatomaceous earth is of fine particle size and within the range capable of entry into the lungs. Provided sufficient concentration and over long periods of time, silicosis from diatomaceous earth is a possibility. On a practical basis the brewery situation, as to silicosis, depends on the regularity of exposure, the concentration and the duration in years. Intermittent operation such as involving only a few minutes and in such intervals as three or four times weekly will introduce no prospect of silicosis. Exposed workers, even on irregular work, should be provided respirators. If the operation be continual, dust counts should be carried out to determine concentration level.

VENOUS BLOOD CELL COUNT

To the Editor:—Is it satisfactory to use venous blood for the determination of red cell count, white cell count and hemoglobin? I should like to use the same blood for chemical studies and for these tests if satisfactory.

M.D., New York.

Answer.—Use of venous blood for red cell count, white cell count and hemoglobin determination is perfectly valid.

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CLINICAL USE OF BLOOD DERIVATIVES

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Boston

Physiologic reasoning underlies sound practice in all fields of medicine today. But physiology, in turn, is dependent on chemistry for insight into the fundamental nature of the phenomena of health and disease. The work of a distinguished company of clinicians and medical scientists over a long period of years has evolved our present state of knowledge of the multiple functions of the blood and of their dependence on the molecular properties of the specific proteins by which they are mediated.

The development of blood derivatives stems logically from this concept that each function of the blood is due to one or more specific components. Great progress has been made in the decade since plasma first came into general clinical use as a derivative of blood in which its osmotic and certain of its nutritional properties could be preserved for use when separated from the more labile cells. Chemical and physical advances have led to better preservation of the cellular components and to the introduction of large scale methods for the separation and purification of plasma proteins for clinical use. These developments not only have yielded important therapeutic results but have given investigators new tools with which to obtain a more thorough understanding of human physiology and its derangements in disease. For example, a β_1-globulin, which has been crystallized from fraction IV-7 of human plasma,[2] accounts for the capacity of the plasma to bind and transport iron.[3] Isolated in pure form, it has been possible to study the reactions of this protein with iron in the laboratory and to make parallel observations on patients.[4] From these investigations has come new insight into iron metabolism and transport, although no disease has yet been found in which a deficiency of this metal-binding globulin requires replacement.

In discussing the clinical use of blood derivatives, it is important to reemphasize the difference between stimulation and replacement therapy. In the former, the patient is stimulated to replenish his own deficit (e. g., the treatment of hypochromic anemia with iron salts) while in the latter, the deficiency is made up by passive transfer from a donor. This has the advantage of immediate rectification of the deficiency, but the effect is relatively short lived and does not reach the fundamental cause. Blood derivatives are indicated for the replacement therapy of specific deficiencies of the blood, whenever speed is important or stimulation therapy is not effective or not available.

Figure 1 clearly indicates the gross differences in composition between certain available derivatives, and the reason that their use for specific indications leads to greater therapeutic effectiveness. Since the recruitment of donors is the most difficult practical task in any blood program, the economy in the use of blood made possible by its separation into fractions, in each of which one or another specific function is concentrated, is of considerable importance. The extent to which the usefulness of a single donation of blood can be magnified by fractionation is seldom appreciated. Table 1 shows what can be derived from the fractionation of twenty blood donations. A glance at the column marked "Dating Period" brings out another important consideration. Many of the important blood components are labile and undergo rapid deterioration in whole blood. Separated and concentrated, each may be packaged in a state best adapted to the preservation of its functional activity, ready for clinical use whenever and wherever it is needed.

BLOOD CELLS

The cellular components of the blood deserve further chemical study. Satisfactory methods for concentration and preservation of the unstable granulocytes and platelets do not exist. Because the red cells contain the most important blood protein, hemoglobin, which is responsible for the vital function of oxygen transport, considerable effort has been expended in improving methods for their preservation. At present, cells taken

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Read in the General Scientific Meetings at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 22, 1948.

This paper is number 74 in the series "Studies on the Plasma Proteins" from the Harvard Medical School, Boston, on products developed by the Department of Physical Chemistry from blood collected by the American Red Cross.

This work was originally supported by grants from the Rockefeller Foundation and from funds of Harvard University. It was aided early in 1941 by grants from the Committee on Medicine of the National Research Council, which included a grant from the American College of Physicians. From August 1941 to July 1946, it was carried out under contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and Harvard University. Since then it has been aided by a grant, recommended by the Panel of Hematology of the National Institute of Health, from the United States Public Health Service.

1. Footnote deleted in proof.

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into chilled bottles containing some modification of the ACD formula and allowed to sediment at 4 C. will keep about as well with most of the plasma removed as they would if kept as whole blood.[5] The amounts of hemoglobin relative to plasma protein and sodium in whole blood and in red cell suspensions shown in figure 1 apply to the Children's Medical Center, where a modified ACD solution, 70 cc. to 500 cc. of blood, is used. After sedimenting in the cold overnight and withdrawal of the supernatant plasma, the cells may be resuspended by shaking, and the suspension, which has a hematocrit reading of approximately 65 per cent, can be used without dilution.[6] Cell suspensions require filtration through gauze or wire mesh and must be mixed with slightly hypertonic sodium chloride solution (1 per cent) if a diluent is used. Red cell suspensions have two great advantages in the treatment of patients with anemia of all types except those due to acute blood loss or severe infection, where there may be a deficit of plasma protein as well. First, they supply more hemoglobin with less of the osmotic activity of the plasma proteins and with less sodium, thus increasing the dose that can be safely given without overloading the circulation. Second, while they provide material for replacement of hemoglobin deficits, the plasma which the patient does not need is saved for other uses. The effectiveness of red cell suspensions was clearly demonstrated[7] even before the substitution, for sodium citrate solution in which 70 per cent of the cells remain viable for only seven to ten days, of ACD solution in which 70 per cent viability can be extended to at least twenty-one days.[8] An important consideration in the use of cell suspensions is the demonstration by the radioactive-iron technic that the iron of the nonviable cells can be efficiently reutilized for hemoglobin synthesis.[9] More work needs to be done in extending the period of life of the red cell in vitro and in the development of practical methods for the general distribution and clinical use of red cell suspensions.

TABLE 1.—*Effect of Fractionation on Utilization of Twenty Blood Donations*

Derivative	Dating Period	Clinical Use	No. Packages	No. Patients Treated	Total
Whole blood........	21 days	Hemorrhage	20	20	20
		Separation of Cells and Plasma			
Red cells............	21 days	Anemia	20	20	30
Dried plasma........	5 yr.	Shock, hypoproteinemia	10	10	
		Fractionation of Blood			
Red cells............	21 days	Anemia	20	20	135
Fraction I...........	1 yr.	Hemophilia, surgery	30*	30	
Gamma globulin.....	3 yr.	Prophylaxis of infections	80	80	
Serum albumin......	5 yr.	Shock, hypoproteinemia	5	5	
Isohemagglutinins†..	1 yr.	Blood grouping	100	2,000	2,150
Thrombin †..........	1 yr.	Hemostasis	150	150	
Other fractions......	.....	Further research	...	...	...

* Alternatives: fibrin foam or fibrin film.

† Yield of these products is so large that they need be produced only from occasional runs.

The processes of chemical fractionation have been applied to the red cell as well as to the plasma. Methods for the preparation of hemoglobin in a relatively stable state have led to investigations of its physiologic activity in solution.[10] Hemoglobin solutions combine oxygen-carrying power with high osmotic activity (the molecular weight of hemoglobin is about the same as that of serum albumin, although it can split into two half-molecules) and therefore act dramatically in experimental shock. Although a few preliminary studies on the use of hemoglobin in shock in human beings have been made, the fact that renal function is temporarily depressed when it is given to experimental animals has properly made all investigators cautious about its clinical use.[11] It is not by accident that nature has chosen to surround hemoglobin at a concentration of 30 per cent with the semipermeable membrane of the erythrocyte. A derivative of hemoglobin, modified globin, has been developed to act as a plasma protein substitute.[12] Further work will be needed before its place in therapy can be finally evaluated. Globin offers the possibility of salvaging the large amount of protein in outdated red cells for nutritional use. The considerable number of active enzymes—catalase, hypertensinase, choline esterase and others—found in the erythrocyte should stimulate further work on their purification from this important human source.

PLASMA

The value of plasma as an emergency blood substitute in the treatment of shock due to blood loss is too well known for further comment. As Evans has indicated, plasma and albumin are substitutes for blood, providing colloid osmotic activity, salts and water which will replace the blood lost and restore the circulation, but lacking the oxygen carrying power of hemoglobin. Thus the plasma-treated or albumin-treated shock patient may recover from his shock, but will then be an anemic patient,[13] with tachycardia, diminished tolerance to exercise and possibly a slower rate of healing. However, the most serious difficulty with plasma has arisen from the practice of pooling and from the excellence of the method of drying from the frozen state used to preserve its labile components, both of which, combined with the stability of the virus, have led to the spread of homologous serum jaundice by means of pooled dried plasma. Table 2, which gives the best available statistics, indicates the relationship of the incidence of serum hepatitis to the size of the pool. The statistics for this country have been gathered through studies initiated by the American Red Cross as part of its blood program. Although no cases were observed after blood or single serum transfusions in the series reported, the disease has been recorded in scattered patients who have received only whole blood transfusions.[14] The statistics for the plasma fractionation products are incomplete, but with the very large pools used, the expected incidence would be very high, while in actual fact it has been negligible, except with fraction I.

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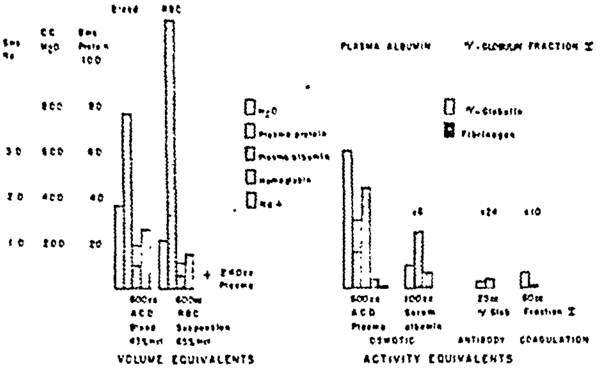

Fig. 1.—Comparison of composition of blood and certain derivatives with respect to water and sodium and their major protein components.

The control of this disease is one of the most important practical problems in medicine. Three approaches are possible; first, development of better screening methods for infectious donors; second, development of methods of immunization against the disease, and, third, development of methods for the sterilization of blood and plasma. Work on all three lines is in progress, but the third approach seems most promising. Although proof has not yet been obtained that ultraviolet irradiation, which acts by its effect on certain proteins, will inactivate known hepatitis virus in large scale processing without altering the labile proteins chemically, there is sufficient evidence of its effectiveness to be optimistic.[15] Passive immunization with human gamma globulin has yielded equivocal results and hardly seems practicable except for the recipients of a pool found to be infected.[16] At the present time, pooled plasma should be used only for clear indications when neither blood nor serum albumin are available .

PLASMA FRACTIONS

The development of large scale methods for the concentration of the protein components of human plasma into fractions, from which various derivatives can be prepared in the form best adapted to preserve their physiologic activity for therapeutic use, has had an important impact on many phases of medicine.[17] These methods, designed for the separation of specific proteins from mixtures, have been applied to the purification of virus vaccines, toxoids, animal serums and tissue extracts, as well as plasma. Although introduced for the separation of half of the plasma protein, serum albumin, from the remaining less stable globulins, so as to provide a compact stable blood substitute during the war, the methods are inclusive, so that a single fractionation process yields all the major components of plasma with minimal losses and minimal denaturation of the labile components. During the Army-Navy-Red Cross blood program of the war, slightly more than two million blood donations were subjected to fractionation, yielding products which were used by the armed forces, returned to the American people when surplus and used in part for research. Since the war, the Red Cross has continued the distribution of surplus blood derivatives—plasma and the products of plasma fractionation—for therapeutic use when the supply has been adequate and the value proved, or for clinical investigation in other instances. Small amounts are also available from one commercial source. The following brief résumé of the present status of the plasma fractionation products is based on published data, personal experience and the work of many investigators who have cooperated in recent studies, for which blood derivatives have been provided by the National Blood Program of the American Red Cross.

Table 2.—*Homologous Serum Jaundice*

Derivative	Maximum No. Donors per Lot	No. Recipients	Incidence, Percentage
Whole blood	1	891 *	0
		750 †	0 ‡§
		821 ‖ (children)	0
Single serum	1	573 ¶	0
Pooled plasma or serum	400	1,054 *	7.3
Pooled dried plasma	50	649 #	4.5
		1,200 †	3 ‡
		274 ‖ (children)	3.5 ‡
Fraction I	2,000	43 **	10 ‡
Gamma globulin	10,000	1,977 ††	0.05 ‡‡
Serum albumin, no heating	2,000	72 ††	1.5 ‡‡‡
Heating		103 **	0 ‡

* Vaughan, J.; Spurling, N., and Shone, J.: The Incidence, Incubation Period, and Symptomatology of Homologous Serum Jaundice, Brit. M. J. **1**: 409, 1946.

† Lewis, E. G.: Personal communication to the author: Results Obtained in a Survey Conducted by the Massachusetts Department of Public Health, with the Cooperation and Support of the American Red Cross.

‡ Preliminary results.

§ A few due to whole blood have been observed.

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# Brightman, I. J., and Korns, R. F.: Homologous Serum Jaundice in Recipients of Pooled Plasma, J. A. M. A. **135**: 268 (Oct. 4) 1947.

** Hervey, G., and Diamond, L. K.: Personal communication to the author: Preliminary Data from American Red Cross Study.

†† Janeway, C. A., and Poole, V. S.: Unpublished data.

‡‡ One case each, probably not due to blood derivative.

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1. *Products of Proteins Involved in Coagulation.*—The value of fibrin foam with thrombin as a hemostatic in many types of surgical procedure is well documented.[18] Whether the foam can be completely supplanted by "gelfoam" (absorbable gelatin sponge)[19] prepared from gelatin or by oxidized cellulose[20] is a problem which only time can solve. Whether potentially antigenic thrombin from animal sources should be used instead of human thrombin, which can be obtained in large amounts in any fractionation program, is a different problem. In any case fibrin foam with thrombin is one of a group of three types of absorbable hemostatic sponges, all of them effective, now available to surgeons in this country. Fibrin film, which has proved so valuable as a dural substitute in neurosurgery,[21] is being compared with film prepared from the plastic polyethylene.[22] Fibrinogen, which forms the matrix of the clot and constitutes 65 per cent of the protein of fraction I, has been used both topically and parenterally. Besides its use with thrombin as a means of attaching skin grafts,[23] it has been employed for the removal of renal stones in an ingenious procedure, whereby a solution of fibrinogen injected into the renal pelvis is coagulated with thrombin and the resulting clot drawn out with all its entrapped calculi.[24] Fraction I has been given in large amounts to several patients, whose blood totally lacked fibrinogen and who were suffering serious bleeding in consequence.[25] Here are instances in which, because of its low concentration in the plasma, it is impossible to give enough fibrinogen by whole blood or plasma transfusion, whereas with fraction I it has been possible to administer a dose equivalent to the total normal circulating fibrinogen.

Table 3.—*Summary of Results with Normal Serum Gamma Globulin in Common Diseases* *

Disease	Immunity in Infancy Early	Value of Globulin	
		Prevention	Treatment
Measles	+	+	±
Infectious hepatitis	—	+	0
Mumps	+	0	0
Scarlet fever	+	S	S
Poliomyelitis	+	—	0
German measles	+	S	—
Chickenpox	0	0	—
Infantile diarrhea	0	0	0
Homologous serum jaundice	—	S	—

Key: + Effective; ± questionable; 0 ineffective; — not known, and S under study.

* Reprinted from Cohn, E. J.: History of Plasma Fractionation, in Andrus, E. C.: Advances in Military Medicine, Vol. 1, Boston, Little, Brown & Co., 1948.

Fraction I, although mainly composed of fibrinogen, also contains other proteins, including the substance which will rectify the coagulation defect in hemophilia; hence the term "antihemophilic globulin." Two hundred to six hundred milligrams of fraction I, reconstituted in 5 to 30 cc. of sterile water and given intravenously, will temporarily shorten the coagulation time in hemophilia in the same way as fresh blood or plasma.[26] Although this product has been proved effective for the temporary control of bleeding episodes and for preparation of patients for dental and surgical procedures, material of high potency can be prepared only from fresh plasma, because of the lability of this protein. Dosage figures will mean little until fresh plasma can be used as starting material and methods of assay can be better standardized.

2. *Blood Grouping Globulins.*—The anti-A and anti-B agglutinins as well as the anti-Rh agglutinins are globulins and can be concentrated as part of the fractionation procedure to yield blood grouping reagents of high potency; provided that the plasma pool from which they are prepared consists of plasma of a single type.[27] The need for readily available accurately standardized potent reagents for the vital blood grouping tests is fundamental to any blood program.

3. *Antibodies.*—The value of the gamma globulin fraction (fraction II) in the prevention and modification of measles was demonstrated in 1943 and 1944.[28] Since that time the use of gamma globulin for this purpose has become standard public health practice in this country. The extent to which a blood program will be called on to meet the need for this product can be inferred from the following figures. More than one million doses of gamma globulin surplus to the needs of the armed forces have been distributed by the Red Cross since 1944 and approximately 600,000 doses in the first six months of 1948 alone. Gamma globulin has been particularly useful in the control of measles in children's hospitals, because of its potency and safety.

Subsequently, the value of this fraction in the prevention and modification of epidemic hepatitis was likewise demonstrated in three outbreaks.[29] Table 3 summarizes present knowledge on the usefulness of gamma globulin in various infections.

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Just as the potency of fraction I in hemophilia depends on the freshness of the plasma from which it comes, the antibody titer of a gamma globulin preparation will depend on the titer of the plasma from which it is derived. In certain instances—notably mumps and scarlet fever—antibodies are present in the blood of normal adults in relatively low titer. However, they are present in much higher concentration in the blood of patients convalescent from these infections, and gamma globulins from convalescent plasma will have a correspondingly higher titer (fig. 2). Such convalescent mumps gamma globulin has been shown to reduce the incidence of orchitis in adult male patients with mumps, although ordinary gamma globulin is ineffective.[30] In the case of pertussis, hyperimmunization of adults with Hemophilus pertussis vaccine has been used to obtain hyperimmune human serum for prevention and treatment of the disease. A gamma globulin concentrated from such plasma is being used instead of the bulkier serum, thus giving a much smaller dose for injection.[31]

4. *Serum Albumin.*—Serum albumin was originally developed as a blood substitute for the emergency treatment of shock in the wounded.[32] In this form it was dissolved in a twice-isotonic sodium chloride solution containing a mercurial bacteriostatic preservative. Subsequently its use in hypoproteinemic edema and nephrosis led to the preparation of a salt-poor albumin solution, in which the sodium content is one-seventh that of an osmotically equivalent volume of plasma and in which stabilization has made possible heating at 60 C. of ten hours.[33] This procedure, which has been shown to inactivate the virus of serum hepatitis,[34] and is adequate to destroy vegetative forms of many bacteria, permits the omission of the preservative. All albumin being produced now conforms to the specifications for low salt, mercurial-free serum albumin.

The value of serum albumin in the treatment of shock due to loss of blood depends on its effectiveness, convenience and safety. It suffers from the same defect as plasma, a lack of oxygen-carrying power, but does not transmit jaundice and is easier to transport and administer. Studies have indicated that in most cases of shock, unless additional sodium chloride solution is given (400 cc. to 25 Gm. of albumin) the full plasma volume increase of 18 cc. per gram of injected albumin will not be achieved, although on the average an increase of 10 to 12 cc. per gram will be observed.[35] However, the low viscosity of albumin makes it harmless even in concentrated solution.

During the past year and a half, distribution of serum albumin, prepared from surplus plasma which was pyrogenic or otherwise unsatisfactory, by the American Red Cross, has enabled investigators in teaching hospitals all over the country to study its physiologic and therapeutic value in a wide variety of conditions. The results of these studies will be summarized in a subsequent report, but some of the individual investigations are already in press or published.

Metabolic studies of the fate of albumin are laborious, but extremely important in understanding the relation between circulating albumin and the body protein stores. In rats, human serum albumin is an incomplete protein which must be supplemented with isoleucine and tryptophane if it is to promote growth and build new tissue protein.[36] Comparable studies in human beings have not been made. When fed to human subjects, serum albumin leads to an increase in nitrogen excretion such as would occur with any addition to dietary protein. When the albumin is injected, no such rise in nitrogen excretion occurs, and there is almost quantitative retention of the injected nitrogen. There is a rise in total circulating albumin and plasma volume which will account for only a portion of the injected protein.[37] Exactly where the remainder goes is an unsolved problem. The extent to which it is stored as albumin or smaller fragments in interstitial fluid or tissues, burned to yield energy or converted to tissue protein is under active investigation by several groups.[38] One interesting observation which has been made is that profuse albuminuria may develop when the concentration of albumin is pushed to abnormally high levels in patients with apparently normal kidneys.[39] Further studies will be needed to clarify the metabolic role of serum albumin.

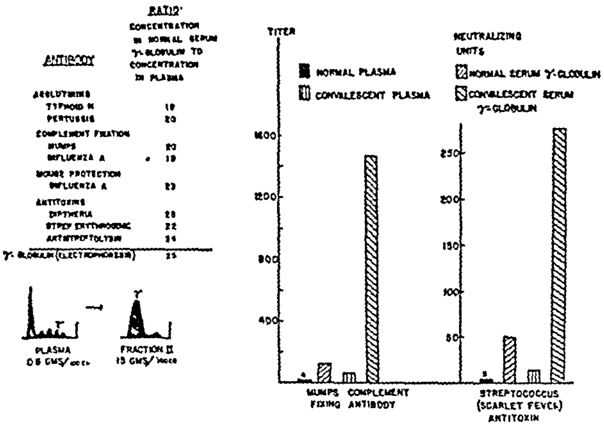

Fig. 2.—Concentration of antibody in normal serum gamma globulin and comparison between antibody titer of gamma globulin derived from normal plasma and that from mumps and scarlet fever convalescent plasmas.

The therapeutic indication for albumin is to sustain or restore the level of circulating albumin, if physiologic

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disturbances result from hypoalbuminemia. When the latter develops acutely, as in severe infections, burns, peritonitis or abdominal or thoracic operations, therapy is apt to be most effective. Large doses, 50 to 100 Gm. in twenty-four hours, and a high caloric intake, are needed to obtain maximum benefit. Albumin, which comes in 5 Gm. as well as 25 Gm. vials, is useful in pediatric patients because of its ease of administration, freedom from reactions and ready miscibility with other parenteral solutions. In some instances it has been used to mobilize fluid and relieve oliguria or to reduce local edema at such sites as the stoma of an intestinal anastomosis in patients with acute hypoproteinemia.[40] For its osmotic properties to be effective in getting rid of edema, the heart and kidneys must be capable of responding to an increase in plasma volume.

In chronic forms of hypoalbuminemia, the situation is more complex. In nephrosis, for example, the injected protein appears almost quantitatively in the urine and little elevation of the serum protein level follows daily injections.[41] Nevertheless, in my experience, many patients receiving an adequate dose of albumin, which is large and approaches the level of tolerance (15 Gm. a day under 4 years, 25 Gm. a day from 4 to 12 years of age and 50 Gm. over 12) will experience a slow diuresis as long as albumin therapy is continued.[42]

In general, diuresis has been observed only after about half of the courses administered. Caution must be observed in the administration of albumin to patients with hypertension. As yet, no evidence of permanent renal injury from albumin has been observed, but hematuria and nitrogen retention have developed in a few patients and further observation will be required to settle this point. The place of albumin in the therapy of nephrosis is limited. It is enormously wasteful and expensive; it does not alter the course of the disease, so far as we know, and subjects the child to a series of intravenous infusions. On the other hand, in certain cases in which other methods of therapy fail and in which edema is really incapacitating, my colleagues and I have found it useful. Rigid restriction of the sodium intake and the prevention and prompt treatment of intercurrent infections are essential in treating children with nephrosis.

The other major cause of chronic hypoalbuminemia is cirrhosis of the liver. Albumin therapy will elevate the serum albumin level to normal if daily doses of 50 Gm. are given for a period of one to two weeks.[43] This is followed by diuresis and disappearance of ascites in some patients, but not in others.[44] Two factors which seem to affect the results are the intake of sodium and the extent to which albumin accumulates in the ascitic fluid, thus raising its oncotic pressure. The most serious reaction observed has been hematemesis in a few patients with large esophageal varices.[32]

The value of concentrated albumin to relieve local or general edema of the brain in patients who have had cerebral trauma or operations is under study. Most neurosurgeons who have used it are convinced that it produces improvement more sustained than that following treatment with hypertonic dextrose, but more concrete evidence is needed before its general use is recommended.[45]

In this paper I have considered albumin as an inert colloid, given to restore osmotic relationships to normal. Presumably other colloids, such as globin, gelatin or gum acacia, might have the same effect. However, one must not lose sight of the fact that serum albumin is a physiologic substance, normally present in blood at a concentration of 4 to 5 per cent. Its osmotic function is best known, but serum albumin has been shown to have an important capacity, frequently rather specific, to bind, and thus presumably to transport in a physiologic manner, many substances of low molecular weight.[46] Thus, fatty acids,[47] naphthoquinones, such as the antimalarial drugs,[48] sulfonamide drugs,[49] mercury[50] and penicillin K[51] are substances for which these binding reactions have been studied. Moreover interactions of one plasma protein with another are just beginning to be investigated. Little clinical research has been devoted to this aspect of the function of albumin. It should not be forgotten, when the use of other substances having grossly similar osmotic properties is enthusiastically endorsed, that the fine structure of human serum albumin was developed by a long process of evolution to meet certain physiologic needs.

COMMENT

Two years ago this subject was presented before this assembly at the San Francisco meeting. At that time, it was pointed out that a large scale program of blood collection and processing would be necessary if physicians caring for our civilian population were to have the same opportunity for therapy and research with blood and its derivatives which was open to those connected with the armed forces during the war. During the past few years the American Red Cross has returned approximately four million packages of dried plasma and over one million doses of gamma globulin to the physicians of this country for the treatment of their patients. It has stimulated research on important practical problems, such as homologous serum jaundice, and has provided fraction I, gamma globulin, normal serum albumin and other blood derivatives to investigators all over the country for studies which have steadily expanded and defined the physiologic function and therapeutic value of many of the blood proteins. As the value of blood derivatives, prepared from a large backlog of surplus blood collected during the war, has been established and as that surplus has dwindled, the question of what would be done to provide these derivatives in the future has demanded an answer. A year ago, after prior consultation with and approval from the American Medical Association and other interested organizations, a National Blood Program was adopted by the American Red Cross. This program, not to be confused with the so-called permissive program, in which a local Red Cross chapter merely contracts to obtain donors for a community blood bank, is slowly getting under way. It is a broad program in which the collection of blood from voluntary donors in regional centers is used to meet the needs of local hospitals and physicians for whole blood and to supply material for processing to blood derivatives on the large scale required for economy. Research on methods of processing, on red cell preservation and on the development of new derivatives and the provision of material to qualified investigators are integral parts of this plan. Locally the medical supervision of the regional center is in the hands of a committee of the county medical society, as it should be, although obviously certain technical practices will have to conform to national standards. No regional center can be started without the approval of the local medical society, hospital association and health department. Such a program does not contemplate the destruction of existing local blood banks which are meeting the needs of the community, but is working toward supplementing them so as to provide not only a national network of blood banks in case of disaster but also the possibility of blood collection on the scale requisite to procure the amounts of blood and its derivatives needed to keep pace with advances in medical and surgical practice.

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No better statement of the basis for the development and use of blood derivatives has been made than by Prof. Edwin J. Cohn,[4c] whose researches have been responsible for the development of human plasma fractionation:

> Starting with the assumption, which must for the present remain an assumption, that every part of the human blood performs an important natural function—that the amount of any plasma component that may wisely be used in replacement therapy is the amount that will tend to reestablish rather than to derange the normal concentrations of the various physiologically significant plasma components—we have attempted to make available as many as possible of its diverse protein components, separated and concentrated as specific therapeutic agents, of value in different conditions, in the interest of the most effective and economical use by a society of the blood which it contributes.

SUMMARY

An attempt has been made to survey the field of blood derivatives. Like all active areas of investigation, it is in a state of flux. However, enough has been accomplished in a decade to establish certain derivatives, such as red cell suspensions, plasma, fraction I, fibrin foam with thrombin, fibrin film, gamma globulin, isohemagglutinins and serum albumin, as valuable therapeutic agents. The use of blood derivatives depends on an appreciation of the fact that deficiencies of one or another of the physiologic functions of the blood occur because of a lack of the specific components, usually proteins, which mediate them.

CLINICAL MANIFESTATIONS OF INFECTION WITH POLIOMYELITIS VIRUS

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Most of the clinical observations on poliomyelitis have been limited to that relatively rare form of the disease which results in residual paralysis. Even here no controlled observations have been published which enable one to say whether a great variety of symptoms are really typical of this disease. For instance, current articles in the foreign and American literature list diarrhea, sore throat, running nose and cough as symptoms of poliomyelitis, but offer no proof. It may be said with safety that outside of paralysis or paresis in a child with an acute febrile illness resulting in head drop, stiff neck and stiff back, and usually accompanied with moderate increase in the spinal fluid protein or cells, no symptoms have been firmly established. Children without these signs from whom the virus has been recovered have often been erroneously called "healthy carriers."

In the special survey of poliomyelitis which has been conducted in Chicago during the past three years, controlled field experiments were planned to elucidate the symptoms of all forms, but especially of the subclinical variety.[1] Subclinical poliomyelitis may be defined as poliomyelitis without stiff neck, stiff back, paralysis or obvious paresis. It is the common or usual manifestation in persons infected with this virus, and a comparison of the symptoms in the subclinical and clinical forms is herein presented.

MATERIAL AND METHODS

The material consists of 64 cases of subclinical and 33 of clinical poliomyelitis from twenty-one Chicago neighborhoods during 1945 and 1946. It was controlled by parallel observations on 157 noncontact or control children from the same

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Six tables giving clinical, epidemiologic and virologic data on the 254 children are included in the reprints, which are obtainable from the authors.

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neighborhoods, making a total of 254 children in the study. The neighborhood was that area within one block's radius of the residence of a reported paralytic case of poliomyelitis. The *field*[2] *and laboratory*[3] *technics have been described.*

Daily clinical observations, including axillary temperatures, were made on a number of children from the fifth to the twenty-first day after known intimate exposure to another child in the infectious stage (i. e., five days before to five days after the onset)[4] of poliomyelitis. Similar studies were made on noncontact subjects in the same and on controls in neighborhoods ten or fifty blocks distant. Noncontact subjects and control subjects were children of similar age and sex as the contact subjects but differing in that no intimate association could be established with another child in the infectious stage of either clinical or subclinical poliomyelitis.

Infection with poliomyelitis virus was said to have occurred if the virus could be recovered from the stool or throat (50 children), or if an elevation of the spinal fluid protein above 35 mg. occurred within twenty-one to forty-five days after exposure to the person with infectious disease. Two "noncontact" children from whom the virus was recovered (7 per cent) and their intimate contact sources were eliminated from this report as were a group of contacts from whom the virus could not be recovered or elevated spinal fluid protein demonstrated. Omitted are 30 contact children believed to have contracted subclinical poliomyelitis and from whom nose, throat and stool specimens were collected, which, at the time of reporting, had not yet been inoculated into monkeys. Several hundred other contact children from the same neighborhoods, but without the benefit of temperature, spinal fluid or virus data, likewise are omitted.

The stools to be tested were received by the virologists (F. B. G. and F. M. S.) in 50 per cent glycerin in isotonic sodium chloride solution and were emulsified in water and centrifuged at about 3,000 revolutions per minute for thirty minutes. The supernatant was dialyzed against distilled water at 4 to 8 C. for eighteen to twenty-four hours, removed and separated into two portions. One portion was designated "raw" and stored. The other portion was mixed with approximately equal volumes of absolute diethyl ether and shaken mechanically for twenty to thirty minutes. The ether was allowed to layer out, and the aqueous phase was cultured in a fluid thioglycollate medium. Specimens showing no bacterial growth in this medium after eighteen to twenty-four hours' incubation were considered to contain bacteria in numbers small enough to allow inoculation of monkeys. Specimens were shaken daily with ether until the point of concentration of viable bacteria described previously was attained. The aqueous phase was drawn off and residual ether removed under decreased atmospheric pressure. All specimens were stored in a frozen state of approximately — 20 C. until inoculated into monkeys.

Three species of monkeys were used in the study: (1) Macaca mulatta (Rhesus), (2) Macaca cynomolgus and (3) Cercocebus fuliginosus (sooty mangabey). Each specimen was tested for virus by inoculation of 2 monkeys by the following routes: intracerebral and intraperitoneal inoculation with the ether-treated material and intranasal inoculation with the "raw" material. Daily temperature records and observations were made on each animal for a period of twenty-one days (or until clinical signs of poliomyelitis were obvious), at which time the animals were killed and representative samples of the neuraxis were taken for histologic examination.[5]

Throat specimens were treated exactly as the stool specimens except that the preliminary emulsification and centrifugation were omitted.

The virus of poliomyelitis was recovered from stools collected during the observation period on 50 of the contact children; 10 other contact children in the field study (4 of whom had not yet been tested for virus) had delayed spinal fluid protein values elevated above 35 mg. Eight additional children who had had intimate contact with infectious patients in the same neighborhoods were recovering or had recovered from minor illnesses without paralysis or stiff neck when the study began. The spinal fluid protein values were elevated above 35 mg. in each. The illness in 4 of the 60 contact subjects in the field study was associated with stiff neck, in 1 with paralysis. Sixty-four children, none of whom had stiff neck, stiff back or paralysis, are considered to have had subclinical poliomyelitis.

There were 33 children from the twenty-one neighborhoods (the 24 original subjects with paralytic disease which attracted us to the particular neighborhoods for a field study and 9 with clinical conditions discovered in the neighborhoods by the field study including the 4 previously mentioned). Each patient with clinical poliomyelitis was admitted to a hospital where thorough clinical and laboratory studies were made (29 were admitted to the Municipal Contagious Disease Hospital, under the direct supervision of Drs. Archibald Hoyne and R. Brown and their staff, and 1 each to Cook County, Children's Memorial and Evanston hospitals).

As already mentioned there were 157 noncontact and control children in the study. Virus was not recovered from the stools, and the spinal fluid protein was not found elevated in 33 noncontact and control children from the same neighborhoods about whom careful field studies failed to establish association with a clinical or subclinical case of poliomyelitis in the infectious period.

Since virus was found in only 7 per cent of the noncontact children examined we added as controls 124 additional children from the same neighborhood studies. Thirty-three were noncontact children of whom temperature and field studies were carried out and from whom nose, throat and stool specimens were collected, but not yet used for inoculation in monkeys; 43 were control children from the 1945 studies and 48 control children from the 1946 studies. These children resided ten or fifty blocks distant from the thirteen poliomyelitis neighborhoods and were chosen for the purpose of sampling virus distribution in the city and for comparing illnesses in such children with those occurring among the noncontact children in the same block as the poliomyelitis patient. The inclusion of these 124 children possibly adds 5 to 8 children from whom poliomyelitis virus may be obtained when our animal inoculations are completed. However, such a small group should not significantly affect our comparative results except to diminish rather than to add to the significance of the symptoms.

Because we wanted to avoid biased clinical observations in our field studies we enlisted the aid of four pediatricians with special training in poliomyelitis (Martin B. Andelman, Irving Abrams, Herman Lander and Arnold P. Drucker), who checked in the neighborhood or in the hospital every illness and suspected illness among the 254 contact, noncontact and control children whose case histories are herein reported. They examined carefully for paresis, paralysis, reflex changes, head drop, stiff neck, stiff back and other clinical features. In addition, each contact, noncontact and control child had, during the period of five to twenty-one days after known exposure to an infectious patient, daily axillary temperature taken and nose, throat and stool specimens collected, and clinical observations were recorded by the field nurses and the field investigators. (The nurses chiefly responsible were Minnie Altiere, Arlene Ross, Audrey Korwin, Lydia Goltz, Florence Brock and Amy Quinlan.) All the children in each of the contact and control neighborhoods herein reported were personally investigated by the senior author, usually by many repeated visits to friends, neighbors and families.

RESULTS

There was no significant difference in the incidence of fever, leg ache, headache, sore throat, vomiting, constipation, diarrhea, running nose, cough or drowsiness between the noncontact patients in 1945-1946 the results for whom were negative for virus and elevated spinal fluid protein and the 43 control subjects for 1945, the 33 noncontact patients for 1946 and the 48 control subjects for 1946, none of whose stools had been injected into monkeys. Three children in the 1946 control group said to have been listless in the field protocols were classified as drowsy, and this error was shown in the calculations. Also, in 4 of the 1945 subjects pertussis developed during the study, and vomiting was therefore prominent. Since the symptoms in the various control and noncontact groups were essentially homogeneous, these were combined in order to swell the controls for the comparisons with the symptoms in children from whom virus was recovered.

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[2] Casey, Fishbein and Bundesen.[1a] Andelman, Fishbein, Casey and Bundesen.[1b] Casey, Fishbein, Abrams and Bundesen.[1c] Casey.[1d] Casey, Fishbein, Abrams, Drucker, Rubinfine, Lava and Bundesen.[1h]

[3] Schabel and Gordon.[1e] Gordon, Schabel, Casey and Fishbein.[1f] Gordon, Schabel, Casey, Fishbein and Abendroth.[1g]

[4] (*a*) Casey.[1d] (*b*) Gordon, Schabel, Casey and Fishbein.[1f] (*c*) Casey, A. E.: Observations on an Epidemic of Poliomyelitis, Science **95:** 359-360 (April 3) 1942. (*d*) Aycock, W. L., and Kessel, J. F.: Infectious Period of Poliomyelitis and Virus Detection, Am. J. M. Sc. **205:** 454-465 (March) 1943.

[5] Schabel and Gordon.[1e] Gordon, Schabel, Casey and Fishbein.[1f] Gordon, Schabel, Casey, Fishbein and Abendroth.[1g] Casey, Fishbein, Abrams, Drucker, Rubinfine, Lava and Bundesen.[1h]

The incidence of the various symptoms and signs in the 157 control and noncontact children was compared with the incidence of various symptoms and signs in the 64 contact children with subclinical poliomyelitis. Fever (almost invariably mild), headache, constipation and drowsiness occurred significantly more often among the children with subclinical poliomyelitis than among the control group. Vomiting, though only probably significant in the entire group, was statistically significant when the 4 pertussis cases were eliminated, or when the incidence was compared directly with that in the 33 noncontact and control children already tested for virus.

Noteworthy was the fact that sore throat, diarrhea, running nose and cough were [illegible] related to the symptoms of subclinical [illegible] was evidence that diarrhea, running nose and cough were significantly not related to this disease. Leg ache was observed too infrequently to be of significance.

The symptoms in the patients with clinical poliomyelitis were then compared with those in the control group. Again running nose, diarrhea and cough were not symptoms of clinical poliomyelitis, but sore throat and leg ache were. The symptoms of headache, vomiting, constipation, drowsiness and mild fever were of statistical significance as in the subclinical form. The difference was that headache, vomiting, constipation, drowsiness, fever and leg ache were more often encountered in the clinical than in the subclinical form. It is interesting that sore throat had no relation to the symptoms of the patients with the subclinical form of poliomyelitis but was often present in children who had stiff neck, stiff back, head drop and paralysis. Furthermore, careful notations at the Municipal Contagious Disease Hospital illustrate the frequency of a visibly red throat in the clinical form. If aches in the muscles of the abdomen and upper extremities were added to those of the lower extremities, myalgia would be a significant symptom in the subclinical as well as the clinical form. Pain along the cervical part of the spine was not infrequent.

COMMENT

Of the 64 children with subclinical poliomyelitis, 16 (25 per cent) presented no symptoms or signs of fever, headache, vomiting, constipation or drowsiness; 8 additional children had fever detected only by the nurses' taking the daily axillary temperatures and not recognized by the patient or by the mother. This made a total of 24 children (38 per cent) who had no reported subjective symptoms whatever. Twenty-two of the 24 children without professed symptoms were 6 years of age, or under (92 per cent), whereas only 24 of 40 children with symptoms were 6 years of age or under. This difference is statistically significant ($X^2 = 7.4$; $n = 1$; $P = 0.01$ —).

To determine whether the subclinical illness was less severe among the preschool children than among those over 6 years of age, the 39 children without history of prior illness or fever were analyzed. Fever was observed by axillary temperature determinations in 5 of 9 children over 6 years of age and in 16 of 30 children 6 years of age and under. Fever was of almost identical incidence in the two groups ($X^2 = 0.013$; $n = 1$). It would seem, therefore, as one might expect, that the preschool children were not as accurate in reporting their symptoms as the older children. An error in our field method was detected in that mothers sometimes noted, with their own thermometers, fevers in the evenings in children when normal readings were made in the nurses' daily visits. These evening fevers were more frequent among the contact than among the control children, and we would recommend afternoon and evening temperature readings for three weeks after exposure to an infectious patient.

The incidence of 1 case of paralytic disease (2 per cent) and 3 of meningitic disease (5 per cent) to 56 cases of subclinical disease (93 per cent), as determined by the virus study, is in close accord with the estimates derived from the field histories and temperature studies already published.[6]

Current studies by our group (unpublished material) on the incidence of stool versus mouth and throat virus in children with the clinical and subclinical disease indicate that the stool virus is present in both groups in apparently the same frequency. However, the virus was recovered from the throat in each of the aforementioned 4 paralytic and meningitic patients (100 per cent) with the clinical disease tested in the last five days of the incubation period and in only about 33 per cent of children with the subclinical form of poliomyelitis.[7] This may explain why sore throat is a symptom of the clinical but not of the subclinical variety. It may also explain why it was possible in earlier studies in Walker County, Ala., to trace a paralytic or meningitic case to contact with a prior paralytic or meningitic case with more ease than to a prior subclinical case.[8] It might also explain why poliomyelitis seems to burn out in a given neighborhood or area if transmission is largely through clinical cases. This would seem to substantiate the importance of the throat and mouth in the contact transmission and minimize the importance of the stool virus in modern communities. This need not predicate that the virus is not present in the throat in the usual subclinical case, but only that it is not easily recovered by swabs or transmitted to another child. Perhaps the severity of throat symptoms is usually directly proportioned to the amount of virus present in the throat and underlying nervous system.

Acute febrile illnesses, without paralysis, of sudden onset and of eighteen to seventy-two hours' duration, among the contacts of poliomyelitis patients have long been recognized.[9] The symptoms of headache, vomiting, sore throat, malaise, drowsiness, reddened throat and enlarged lymph nodes have been described. Estimates of the frequency of such cases have gradually increased during the years: 1:1 or 2:1,[9a] 2:1 or 4:1,[9c,d] and 6:1 or 14:1.[9e] Because the head drop, stiff neck and stiff back were so characteristic, no clinical diagnoses of nonparalytic poliomyelitis were generally considered tenable without these observations. The other symptoms have been considered too speculative for clinical use.

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[6] Casey, Fishbein and Bundesen.[1a] Andelman, Fishbein, Casey and Bundesen.[1b] Casey, Fishbein, Abrams and Bundesen.[1c]

[7] Schabel, F. M.; Casey, A. E.; Fishbein, W. I., and Gordon, F. B.: Unpublished data.

[8] Casey.[4c] Schabel, Casey, Fishbein and Gordon.[7] Casey, A. E.: The Pathology of Poliomyelitis with Special Reference to Observations in Walker County, Alabama, J. M. A. Alabama **12:** 2-3 (July) 1942; The Incubation Period in Epidemic Poliomyelitis, J. A. M. A. **120:** 805-807 (Nov. 14) 1942; Place of Contact and Radial Spread of Epidemic Poliomyelitis, Am. J. Dis. Child. **69:** 152-156 (March) 1945. Wenner, H. A., and Casey, A. E.: A Community Study of Carriers in Epidemic Poliomyelitis, J. Clin. Investigation **22:** 117-125 (Jan.) 1943.

The literature contains only isolated instances of minor illnesses among contact subjects without stiff back, stiff neck and without paralysis, which were proved by the recovery of the virus or by demonstration of a rise in spinal fluid protein. Taylor and Amoss [9g] in 1917 recovered the virus from the throat of a child contact (white boy, aged 10 years) several days before fever of short duration and diarrhea developed. There was no stiff back, stiff neck or paralysis and no other symptoms. Paul and Trask [9e] recovered virus from the throat of 2 contact subjects without paralysis or stiff neck. The first, a white male infant of 13 months, had fever and drowsiness and the reaction of the spinal fluid was negative immediately; the second, a white boy aged 5 years, had fever of eighteen hours' duration and vomiting. Paul, Trask and Webster [9h] obtained the virus from the throat of a contact subject in whom nausea, headache, fever, anorexia and pains in the legs and back developed, with the immediate reaction of the spinal fluid negative and no stiff neck, stiff back, paralysis or weakness. Langmuir [9i] recovered virus from the stool of 10 contact subjects without stiff neck, stiff back or paralysis. Four of the 10 experienced vomiting and abdominal pain, 1 fever and vomiting, 1 pain in the knees and backache and 1 headache, pain in the eyes, dizziness and soreness in the chest and abdomen; 2 had "mild upper respiratory symptoms" and were not confined to bed. Of the 14 children described, 5 had fever of short duration, 6 experienced vomiting, 2 headache, 4 abdominal pain, 2 pains in the legs and 2 pains in the back. The low incidence of fever may be due to the lack of systematic field study, and the high incidence of other symptoms to the failure to study the stools of many asymptomatic infants for virus. The symptoms detected are entirely compatible with our own observations.

Ours is, however, the first controlled series of children with subclinical poliomyelitis studied during the incubation and disease periods and proved by virus and spinal fluid studies.

SUMMARY AND CONCLUSIONS

The symptoms reported by 97 children with poliomyelitis are compared with those among 66 noncontact children living in the same block with the patients, and among 91 control children living in neighborhoods ten or fifty blocks distant. Poliomyelitis was proved in each child by the recovery of virus from the stool or throat and/or by the occurrence of elevated levels of spinal fluid protein twenty-one to forty-five days after intimate contact with an infectious patient.

Thirty-three of the 97 had clinical poliomyelitis characterized by paralysis, paresis, head drop, stiff neck or stiff back. The remaining 64 were intimate contacts of infectious patients in whom subclinical poliomyelitis characterized by an absence of the aforementioned signs developed within five to twenty-one days after exposure.

No differences in the symptoms between the noncontact children and the controls were detected. Mild fever of short duration, headache, vomiting, constipation, myalgia and drowsiness characterized both the clinical and the subclinical forms of poliomyelitis, the difference being one of degree and increased frequency among the former. Sore throat was definitely not a symptom of the subclinical variety, but was significantly related to stiff neck, stiff back and paralysis or paresis. The possibility is discussed that the presence of sore throat in clinical cases and its absence in subclinical cases might coincide with the quantity of virus present in the throat and in the nervous system, with the infectiousness and clinical severity and with certain epidemiologic features of the disease.

Running nose, diarrhea and cough were definitely not related to the symptoms of either clinical or subclinical poliomyelitis. Evidence of poliomyelitis among children 6 years of age and under is difficult to obtain without an adequate field study, even though 80 to 100 per cent of such children succumb on exposure. The younger patients are less likely to report minor symptoms described in almost every instance by older children.

Virus was recovered from the stool (50 children) and/or the spinal fluid protein was elevated above 35 mg. in 60 intimate contact sources of infectious patients in whom poliomyelitis developed within five to twenty-three days after known exposure. Four of the 60 children had the clinical disease (1 was paralytic [2 per cent] and the other 3 nonparalytic [5 per cent], with stiff neck, stiff back and head drop) and the remaining 56 had the usual or subclinical form of the disease (93 per cent).

ABSTRACT OF DISCUSSION

DR. HULDA E. THELANDER, San Francisco: Subclinical poliomyelitis in the environment of the paralytic patient is the logical clinical concept. The infectious agent is widely dispersed, but only a relatively small number of persons harboring the virus succumb to recognizable disease. This knowledge should alert one to considering more carefully the host and factors influencing susceptibility on the one hand and the possible variability of the infectious agent on the other. The literature makes frequent references to fatigue and trauma as factors predisposing the host to paralytic disease. Dr. Shaw and I have long maintained that bacterial infections at times may also be predisposing factors. Most of the cases in any epidemic season are almost completely devoid of any apparent infections of the respiratory or the intestinal tracts. There are, however, some patients with exudative sore throat or with diarrhea, and even pneumonia, preceding paralytic symptoms. It is likely that these symptoms represent concomitant infections which may actually alter the host's resistance to the virus of poliomyelitis. Such infections may even be the explanation of the so-called dromedary type of the disease. From experiments in animal passage, it is evident that viruses may alter their characteristics. How much human passage may result in alterations of the virus has not been determined. Does the present concept of poliomyelitis represent more accurate observations of the disease, or has the disease altered some of its manifestations through the years? This possibility should be carefully evaluated in recording observations for comparison with future studies; accurate clinical observations may contribute as much to progress in our knowledge of the disease as laboratory studies.

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[9] (*a*) Wickman, I.: Beiträge zur Kenntnis der Heine-Medinschen Krankheit (Poliomyelitis acuta und verwandter Erkrankungen), Berlin, S. Karger, 1907. (*b*) Peabody, F. W.; Draper, G., and Dochez, A. R.: A Clinical Study of Acute Poliomyelitis, Monograph 4, Rockefeller Institute for Medical Research, June 24, 1912. (*c*) Frost, W. H.: Epidemiologic Studies of Acute Anterior Poliomyelitis, Hygienic Laboratory Bulletin 90. United States Treasury Department, Public Health Service, 1913. (*d*) Leake, J. P.; Bolton, J., and Smith, H. F.: Winter Outbreak of Poliomyelitis, Pub. Health Rep. **32:** 1995-2015 (Nov. 30) 1917. (*e*) Paul, J. R., and Trask, J. D.: Observations on Epidemiology of Poliomyelitis with Particular Reference to So-Called "Abortive" Poliomyelitis, Tr. A. Am. Physicians **47:** 116-128, 1932; Detection of Poliomyelitis Virus in So-Called Abortive Types of the Disease, J. Exper. Med. **56:** 319-343 (Sept.) 1932. (*f*) Aycock, W. L.: Acute Anterior Poliomyelitis, in Nelson's Loose Leaf Medicine, New York, Thos. Nelson & Sons, 1943, vol. 2, pp. 67-84. (*g*) Taylor, E., and Amoss, H. L.: Carrier of Virus of Poliomyelitis, J. Exper. Med. **26:** 745-754 (Nov.) 1917. (*h*) Paul, J. R.; Trask, J. D., and Webster, L. T.: Isolation of Poliomyelitis Virus from Nasopharynx, J. Exper. Med. **62:** 245-257 (Aug.) 1935. (*i*) Langmuir, A. D.: Carriers and Abortive Cases in a Rural Poliomyelitis Outbreak, Am. J. Pub. Health **32:** 275-281 (March) 1942.

Dr. James P. Leake, Washington, D. C.: Poliomyelitis occurs at all times and in all places, permitting comparison of one epidemic area with another, but for comparison of the incidence in various climates and places, I think that one can count only paralytic cases, that is, cases in which there is definite demonstrable muscular weakness. As far as I know, this is the first time the incidence of symptoms has been statistically worked out. We are indebted to Drs. Casey, Bundesen and McCoy and all others that have labored so thoroughly on this. Their results coincide with what we have felt before. Dr. Thelander's caution of considering at least the possibility that many things that are usually attributed to a disease may be a preceding infection is worth taking into consideration.

Dr. C. H. Webb, Shreveport, La.: While the varied manifestations of infection with poliomyelitis virus and the frequency of subclinical disease are generally recognized, the need of definitive studies is evidenced by vague statements in the literature; for example, that in every epidemic 10 to 1,000 cases of mild disease occur for every case with paralysis. The incidence of subclinical infections reported by the authors among the contacts as compared with noncontact children in the same neighborhood connotes important epidemiologic implications. The charts of 50 children whose disease was diagnosed as acute poliomyelitis by four pediatricians in the group observed by my co-workers and me were reviewed: 45 of these children have been seen since 1940; 33 were paralytic and 17 nonparalytic. Fever was listed in every instance, headache in 30 per cent, irritability in 32 per cent, sore throat or reddened pharynx in 28 per cent and drowsiness in 14 per cent. No significant variation was noted in these symptoms as between paralytic and nonparalytic children. Leg ache was complained of by 25 per cent of the paralytic patients, but by none of the nonparalytic. Vomiting occurred in 33 per cent of the paralytic patients and in only 12 per cent of the nonparalytic. Abdominal pain and constipation were noted in 15 and 9 per cent of the paralytic and rarely in the nonparalytic children. Diarrhea, coryza and cough were listed in less than 5 per cent of either group. It is worthy of note that convulsions occur rarely in poliomyelitis—only once in our 50 cases, in striking contrast to other acute infections of the central nervous system during childhood. During the summer of 1947, diagnostic difficulties were presented by the occurrence of a clinical syndrome of epidemic proportions, consisting of sudden high temperature, headache and occasional myalgia, lasting three to four days and clearing dramatically. Symptoms referable to the gastrointestinal or respiratory tract were rare. Successive sibling or contact cases suggested an incubation period of four to seven days. Adults were infrequently affected. Treatment with sulfonamide drugs or penicillin, when tried, was unavailing; laboratory observations were equivocal. In several instances, questionably stiff neck or back pains prompted spinal fluid examinations, results of which were normal. During the same period, in which we have records of 48 such cases and knew of over 100 more, poliomyelitis was at low ebb and no contact history could be established. We believe that this is a separate entity, probably of virus causation, and have recently described its clinical and epidemiologic features under the name "three day fever." It is intriguing to note its similarities to nonparalytic poliomyelitis and to herpetic pharyngitis, and yet distinctive features appear. It is hoped that virus studies can be made if a similar epidemic occurs. From the point of view of clinical research and experience, it would be important to evaluate all available methods by which viral infections may be differentiated from bacterial, in view of the general tendency to administer sulfonamide drugs and antibiotics to all acutely ill children. We are pursuing a study of atypical lymphocytes, heretofore described in infectious mononucleosis, measles, german measles and infectious hepatitis. To a varying degree we find that these cells occur in a number of infections in which the cause has been demonstrated or presumed to be viral, but rarely in bacterial infections.

Dr. Haddow M. Keith, Rochester, Minn.: Subclinical poliomyelitis is recognized only by recovering the virus from stools or from the throat or when the level of spinal fluid protein is elevated, other causes for this, of course, being ruled out. The method of proving subclinical infections is available mainly to groups having facilities to recover the virus; in other words to specially organized, trained and endowed groups. Perhaps the majority of children, then, have a mild form of subclinical poliomyelitis and therefore have immunity for a good many years. It has also been suggested that in crowded and unsanitary areas in the East, such as Cairo and Bombay, poliomyelitis is not a major problem, but in our American cities it has tended to increase within the past fifty years. Also there tends to be more poliomyelitis and severer poliomylitis in adults than there used to be. Are we by our effective public health measures against other diseases making poliomyelitis more of a problem than it used to be? If so, this means that we must direct our efforts toward a program of prevention, such as we conduct against smallpox or diphtheria. I would like to point out that neutralizing antibody tests reveal different strains of poliomyelitis virus, which may make a preventive program a little more difficult. I think that it is also true that the correlation of neutralizing antibodies and clinical immunity is not absolute and further studies are necessary along these lines. There is no doubt that there are numerous problems to be solved before poliomyelitis can be controlled effectively. It seems imperative, however, that the main effort be directed toward developing preventive procedures applicable in infants and children, such as have been developed against the other great epidemic diseases.

Dr. A. F. Abt, Chicago: The definitions submitted for subclinical and clinical poliomyelitis rather confused me. Of course, in pediatrics, there are continually changing definitions, with resultant confusion, but the long accepted definitions, as I knew them, consisted first of reported poliomyelitis, which is understood to be a systemic infection with no involvement of the central nervous system. Then comes a period of quiescence of symptoms, following which there is again fever, and then, as I take it, there are two types of infection—the nonparalytic and the paralytic. In the abortive type with systemic infection and no involvement of the central nervous system there is a clear normal spinal fluid, and we have no way of making a positive diagnosis of this type. What is needed is a quick and rapid method of isolating the virus, so that if one could distinguish this systemic involvement without involvement of the central nervous system, then one could probably evolve some form of treatment, but I do not feel that the treatment will ever be effective in the nonparalytic or paralytic stages.

Dr. Albert E. Casey: The point made by Dr. Thelander on the symptoms of concomitant infection and constitutional variation may explain some of the problems in this disease. The importance of differentiating between infection with stiff neck from infection without stiff neck is borne out by current studies in our group. This is unpublished material on the incidence of stool versus mouth and throat virus in children with the clinical and subclinical difficulties. These indicate that the stool virus is present in both groups. However, the virus was recovered in the throat in each of the aforementioned paralytic and meningitic patients but in only about 33 per cent of children with the subclinical form of poliomyelitis. This may explain why sore throat is a symptom of the clinical but not of the subclinical variety. It might also explain why poliomyelitis seems to burn out in a given neighborhood with transmissions largely from subjects with clinical infection. This would seem to substantiate the importance of throat and mouth and contact infection and minimize the importance of transmission in schools in the modern communities.

TREATMENT OF IDIOPATHIC PERNICIOUS ANEMIA

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Addisonian or idiopathic pernicious anemia is a complex disease resulting from a lack of specific factors necessary (1) for the normal growth and development of erythrocytes, (2) for the nutrition of nerves and spinal cord and (3) for the correct functioning of the gastrointestinal tract. With a deficiency of such factors (1) large uncompleted red cells stagnate in the marrow which becomes hyperplastic and red—such erythrocytes as are released into the circulation are macrocytic and so larger than normal, (2) the peripheral nerves and spinal cord degenerate from interference with nutrition and (3) the papillae of the tongue atrophy and the epithelial cells of the gastrointestinal tract become abnormal with impaired function. It is not known just how many factors are involved. There are certainly two and perhaps more. The disease was always fatal before the discovery of liver therapy. Over 10,000 persons died yearly in the United States alone before the epoch-making work of Whipple, Minot, and Murphy.

The clinical features of the disease are (1) macrocytic anemia, determined by count and measurement of the red cells, (2) subacute combined sclerosis of the spinal cord and peripheral neuritis, usually manifested first by a loss of vibratory sense, and (3) atrophy and soreness of the tongue, often diarrhea and digestive disturbances from impaired function of the stomach and intestinal tract, and a constant and absolute absence of free hydrochloric acid on gastric analysis. Not all patients show every manifestation. The combinations of symptoms and signs are varied; all, however, show the macrocytosis of red cells and achlorhydria. The patient is completely relieved of active disease by adequate liver therapy.

THE BONE MARROW LESION

In true idiopathic pernicious anemia there is a gradual lack of the specific factor needed for maturity of the red cells in the bone marrow. More young and incomplete erythrocytes which are larger than normal appear in the circulation. The number of circulating cells decreases also, so that there is macrocytic anemia. As the deficiency continues more and more immature large cells accumulate in the marrow, and the anemia of the peripheral blood becomes more pronounced. The examination of the bone marrow obtained by puncture shows many large megaloblasts and other macrocytes. The peripheral erythrocyte count becomes lower and lower. As the anemia progresses, the red cells continue large, and in time other abnormalities, such as poikilocytosis, anisocytosis, nucleated cells and basophilia, appear. These are late manifestations, however, and one should never wait for their appearance before making the diagnosis of pernicious anemia. The diagnosis should be made on the basis of manifestations of which the most important, so far as the blood is concerned, is the macrocytosis of red cells.

With macrocytic anemia there is usually leukopenia with increased maturity of the polymorphoneutrophilic cells. The leukocytes are retained in the hyperplastic red cell tissue longer than normal and thus become more mature, as shown by increased segmentation of the nucleus. Similarly, the development of megakaryocytes is interfered with and the number of platelets in the peripheral blood is reduced. The characteristic blood lesion then is macrocytic anemia with leukopenia and reduced platelet count.

THE NEUROLOGIC LESION

A high proportion of patients with well developed pernicious anemia complain of numbness and tingling of the hands and feet. Examination reveals that the vibratory sense in the lower legs is impaired. Later this becomes more widespread, the position sense of the feet is lost and still later there may be ataxia or spasticity with altered tendon reflexes due to impairment of the posterior and lateral columns of the spinal cord. Many patients with unrecognized or inadequately treated disease become unable to walk and are confined to bed.

THE GASTROINTESTINAL LESION

An almost constant observation in untreated or incompletely treated pernicious anemia is a clean smooth tongue, due to atrophy of the papillae. With this atrophy, real glossitis develops. This also is due to the lack of specific factors necessary for the normal nutrition of the tongue.

There is always achlorhydria. This seems a primary lesion with atrophy of the mucosa of the stomach and subsequent loss of gastric ferments. Many available data indicate that a patient with pernicious anemia has always lacked free hydrochloric acid. Every patient suspected of having pernicious anemia should have a test meal as well as careful study of blood and bone marrow. The mucosa of the small bowel also becomes atrophic and does not function normally. Absorption is faulty, leading to digestive disturbances and impaired nutrition. Diarrhea often develops.

The deficiency in pernicious anemia is quantitative. If untreated, it gradually becomes worse, with more serious symptoms. The blood lesion can be completely reversed with a return of the blood to normal. The anemia, leukopenia and thrombopenia all disappear, leaving no trace of the former deficiency. The bone marrow also becomes normal. The achlorhydria is permanent. Free hydrochloric acid never reappears in the stomach, regardless of intensive therapy.

COURSE OF EVENTS IN PERNICIOUS ANEMIA

The primary defect in pernicious anemia is a deficiency in a secretion of the stomach mucosa, the intrinsic factor of Castle, which acts on ingested food to form the substance or substances necessary for normal nutrition of bone marrow, nervous system, tongue and gastrointestinal tract. The intrinsic factor is probably a ferment.

Liver therapy completely relieves the deficiency in all three systems. This was at first thought due to a direct supply by the liver of a maturing factor or factors. It seems apparent that liver extract acts through some other mechanism and not by actually furnishing the missing factor or factors.

The discovery of folic acid throws further light on the problem. It has been observed that this may replace liver extract in relieving the anemia and thus may be the specific erythrocyte-maturing factor missing in the bone marrow. It may become a part of the erythrocyte

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stroma. Potent liver extract contains only a minimum of folic acid and not enough for the action observed. Moreover, it does not protect against a neurologic lesion, so that it is evidently not the specific element needed for the nutrition of nerve tissue. It may cause the gastrointestinal tract to return to normal. It seems probable that liver extract acts through an enzyme system enabling the body to release the specific principles needed from stores of bound substances in the body. This explains its action in relieving all the deficiencies involving the blood, nervous system and gastrointestinal tract without actually supplying the needed substances.

The defect arising primarily in the stomach in true addisonian pernicious anemia may arise secondarily in other diseases, such as sprue, or after operation on the gastrointestinal tract. Here the defect is not due to lack of formation but to lack of absorption or utilization or to increased need, as in pregnancy.

How should this complex deficiency which is called pernicious anemia be treated? In idiopathic pernicious anemia the initial defect is permanent. There is no evidence that the missing factor in the stomach, which is primarily at fault, ever returns. Treatment must be adequate and permanent. The amount of deficiency is variable, so that it is difficult to gage the need. The important point in therapy is to treat fully and permanently. Since one cannot accurately gage the need for specific treatment, it is best to give enough treatment to cover all possible needs. Overtreatment does no harm, while undertreatment often leads to serious disability. Often less treatment is required to relieve the blood lesion than is needed to prevent or relieve the neurologic lesion. Every student of the disease is constantly confronted with patients who have had enough treatment to prevent significant anemia but present a disabling cord lesion while the insufficient treatment is being carried on. Since the cord lesion may be irreversible, often the patient remains a cripple regardless of the intensity of treatment.

The degree of involvement of the three systems is variable. There may be little anemia with much neurologic disturbance. The anemia may be extreme with no demonstrable neurologic disturbance; thus all combinations are possible.

Many methods of treatment are now available—whole liver, oral liver extracts, parenteral liver extracts, stomach extracts, folic acid and accessory substances, such as iron, hydrochloric acid and vitamin preparations, are offered for selection. The suggestions given are based on experience with more than 600 patients with true addisonian pernicious anemia by one of us (R. L. H.) and on recent discussions with numerous hematologists having a wide interest in this disease.

Whole liver is an excellent source of protein food besides having the specific action of liver. It is helpful for a person suffering from pernicious anemia to include liver in the diet, but it is not satisfactory for complete treatment. Stomach extracts can be given only orally, so that they are not desirable for the treatment of pernicious anemia. Oral liver extracts are often disagreeable to take, are much less potent than parenteral liver extracts and depend on absorption from the gastrointestinal tract. Treatment with oral liver extract is also more expensive than parenteral therapy.

Parenteral administration of liver extract is the treatment of choice for pernicious anemia. Unfortunately, extracts of many different unitages are offered the physician. The most desirable extract contains 15 antianemic units per cubic centimeter. It has been found difficult to make preparations of more potency. There is no reason to use a weaker extract, such as 1, 2, 5 or 10 units, or stronger extracts, containing more than 15 units per cubic centimeter. The problem is complicated only by using extracts of low and varying potency. These are provided entirely to meet competition among drug houses and not to supply real needs of the patient. Unfortunately, all liver extracts have to be standardized on patients. It seems evident that a unit is not always the same, although theoretically it represents the daily need. It is important to select a potent extract containing 15 units per cubic centimeter and to continue the use of this preparation, since one soon learns what to expect from a preparation of dependable constancy.

How should this liver extract be prescribed? There is no way to determine exactly the amount of specific principle needed to supply the deficiency. Any excess given is not excreted, and when treatment is begun the body is usually completely void of the needed factor. It is doubtful whether symptoms develop until the deficiency is absolute. The results of incomplete therapy are serious, often leading to permanent disability from a cord lesion, and overtreatment is always indicated. There is no harm in overtreating, and additional liver extract is inexpensive. The first principle in treatment is to prescribe large amounts for a sufficiently long time. There is no way to be exact in dosage. We insist, if possible, in hospitalizing the patient for the first two weeks of treatment. This gives an opportunity to follow the reticulocyte count, to gage the efficiency of response to treatment and to emphasize to the patient the seriousness of the disease. We have followed the principle of giving 15 units of extract daily for two weeks. A similar amount is prescribed twice a week for the remainder of a three month period. Weekly injections of 15 units are then given for three months, followed by twice monthly injections for six months. After this intensive treatment for one year, injections are given monthly for the remainder of the life of the patient. Usually 15 units are enough; 30 units will supply any need. Once the correct diagnosis of pernicious anemia is made, we know that the patient will always have pernicious anemia. There is no record of a recovery from true addisonian idiopathic pernicious anemia. The disease is not cured; there is only compensation for the deficiency by the administration of sufficient potent liver extract. Treatment must be constant and continuous through the life of the patient.

What results are obtained by adequate and complete therapy? The blood and bone marrow return completely to normal and remain so unless some other disease or factor disturbs the hematopoietic system. A neurologic lesion never develops under adequate and complete liver therapy. Usually a systematic improvement in an existing cord lesion occurs with intensive liver therapy, although the signs of cord involvement, such as absent vibratory sense and altered reflexes, usually persist. Only rarely does a patient remain disabled with proper therapy.

The achlorhydria always continues; the remainder of the gastrointestinal symptoms and signs disappear. The papillae of the tongue return to normal, the glossitis and diarrhea disappear, the body nutrition and absorption from the small intestine proceed normally and indigestion causes no more trouble.

The treatment of this serious disease is so satisfactory with complete liver extract therapy that the patient returns to normal and remains normal with continuous adequate therapy. There is no greater triumph in medicine than the marvelous response of this previously fatal disease to liver therapy.

Folic acid has already been mentioned as a possibly specific chemical substance needed by the bone marrow to complete the growth of red cells. According to this concept, it is actually incorporated into the red cell stroma to assure normal growth. Liver extract does not actually become a part of the cell stroma. Folic acid may cause the blood and marrow to return to normal, although the results are not so constant as with liver therapy. With adequate folic acid therapy the tongue and gastrointestinal tract may also return to normal. It is doubtful that a response on the part of the marrow and gastrointestinal tract is as satisfactory or constant as with liver therapy. In other types of macrocytic anemia, such as with sprue, the results may be even better with folic acid than with liver. The treatment of macrocytic anemias other than addisonian pernicious anemia is, however, another subject.

Folic acid does not influence the neurologic lesion. Many cases have been reported in which cord lesions have developed under folic acid therapy. The statement has been made that two thirds of the patients under folic acid treatment present a spinal cord lesion during adequate therapy. It seems probable that folic acid is in no way related to the cord lesion, but that some unidentified substance made available by liver therapy is the specific principle in the neurologic lesion.

We see no reason for depending on folic acid for the treatment of pernicious anemia. This point is emphasized by all competent observers. Is it of value to add folic acid to liver extract? There is no good evidence to support such a view if the liver therapy is complete. Folic acid only adds to the cost of treatment. With adequate and potent liver extract therapy the results in the treatment of pernicious anemia are so ideal that no change should be made at present.

Should auxiliary treatment be given? We see no reason to prescribe iron, hydrochloric acid, digestive ferments, mineral salts or vitamins. The patient should have a complete wholesome diet with adequate protein. Most patients will have good food intake spontaneously, since the appetite quickly improves and food is taken after adequate liver therapy.

An allergy rarely develops to parenteral liver extract. One can avoid the possibility usually by changing the type of liver extract. The reaction is due to the specific animal and not the liver as such. Since extracts from beef, hog, horse and sheep may be used, the allergy problem can almost always be managed. When the use of liver extracts parenterally is impossible, oral therapy should be tried with or without antihistaminic drugs, such as diphenhydramine hydrochloride ("benadryl hydrochloride") or tripelennamine hydrochloride ("pyrabenzamine hydrochloride"). The reaction from parenteral injections may be prevented by the addition of small amounts of epinephrine.

If all liver therapy is impossible, folic acid may then be used without influencing an existing neurologic lesion. Such a lesion is likely also to develop during adequate folic acid therapy. Some observers have expressed the thought that this development might be more possible with folic acid.

SUMMARY

Addisonian idiopathic pernicious anemia is a deficiency disease affecting the bone marrow, the nervous system and the gastrointestinal tract. This deficiency is responsible for the characteristic macrocytic anemia and megaloblastic bone marrow, the subacute combined sclerosis and peripheral neuritis, the glossitis and other gastrointestinal symptoms. The fundamental defect is in the stomach mucosa, and, once there, is always present.

All manifestations of the disease can be prevented and relieved by proper therapy. Treatment is necessary throughout the life of the patient if the diagnosis is correct. Liver therapy is perfect treatment with proper technic and a potent preparation. More than one substance is deficient, but all absent factors become available with liver therapy. Liver is best given as a potent extract parenterally. Treatment should be intensive at the onset to more than satisfy the deficiency. Treatment must be given regularly and adequately for the life of the patient. Folic acid is only partial therapy and does not relieve the deficiency responsible for the neurologic lesion, which is the most serious aspect of of the disease.

Until the introduction of liver therapy pernicious anemia was invariably fatal. The serious crippling lesion of the disease is involvement of the nervous system. This can be prevented and often helped by liver therapy but not by folic acid. A method for administering liver extract which has proved highly satisfactory for a large number of patients is outlined.

ABSTRACT OF DISCUSSION

Dr. Frank H. Bethell, Ann Arbor, Mich.: I agree with the speaker that no treatment other than with refined liver extract is ordinarily needed for pernicious anemia. Crude extracts have no advantages over the refined and concentrated types. Vitamins have no value except to relieve deficiency. I am not prepared to accept fifteen units per month as adequate treatment for the majority of patients with pernicious anemia. We have found that fifteen units twice a month is perhaps a safer dose, particularly since there are no ill effects from giving more treatment than is required. A careful hematologic examination is the only way one can measure the adequacy of maintenance therapy. It does not do to wait for the return of symptoms. A careful hematologic examination includes a determination of erythrocyte size by means either of diameter measurement or estimation of mean corpuscular volume. Unless cell size is within normal limits, the treatment cannot be said to be adequate. Folic acid, as Dr. Haden mentioned, has a distinctly limited field in the treatment of pernicious anemia; indeed, it is questionable whether it should ever be employed. It is about equally effective by both oral and parenteral routes of administration. Combinations of liver extract and folic acid are irrational, because of the different dose requirements and different excretion rates of the two substances. Folic acid should never be given to patients with evidence of nervous system disease, and others receiving it should be kept under close observation for development of neurologic manifestations. If such appear, folic acid therapy should be discontinued immediately and liver extract substituted for it. The recent announcement of a crystalline substance isolated from liver and tentatively named vitamin B_{12} may lead to complete revision of the specific treatment of pernicious anemia and related macrocytic anemias. This compound in our hands at Ann Arbor has induced optimal hemopoietic responses in patients with pernicious anemia in doses as small as 1 mg. daily. As the speaker indicated, medicinal iron preparations are not ordinarily valuable in the treatment of pernicious anemia. However, when hypochromia or a low color index is present after response to specific therapy, ferrous salts should be prescribed in divided daily doses of 1 to 2 Gm. Most female patients with pernicious anemia before the menopause benefit from the adjunct use of medicinal iron. Hydrochloric acid occasionally has a place in treatment, at least temporarily. A dose of 2 to 4 cc of the U. S. P. dilute solution given in water with meals may have a beneficial effect on digestion and aid in controlling diarrhea, especially in the early period of treatment. It has no specific value, and it usually can be discontinued without recurrence of digestive symptoms after remission is well established.

Dr. Howard L. Alt, Chicago: The considerable literature on the effect of folic acid in pernicious anemia has led to some confusion as to how this disease should be treated. For this reason, the paper of Drs. Haden and Bortz is timely in pointing out clearly the treatment of choice in pernicious anemia. Folic acid has been relegated to a rather insignificant place in treatment. My co-workers and I have not used intensive parenteral liver therapy for the period of time advocated by Dr. Haden. It has been our custom to give about 150 units of liver the first week and then 15 units once a week until the blood picture is normal and the cord symptoms and signs become static. In our experience, relapses are not uncommon with the parenteral administration of 15 units of liver once a month. On the other hand, 30 units every twenty-one days will maintain the disease in practically all cases in complete remission. I am glad that Dr. Haden pointed out the difference in potency of 15 unit liver preparations manufactured by different companies. It is wise to use a single preparation in order to know what that one will do. In maintaining patients in complete remission, a careful study of the symptoms, physical signs and the blood picture should be made every three or four months. We have found it useful to tabulate neural symptoms and signs, including a record as to whether the vibration sense is normal, diminished or absent from the iliac crests to the malleoli. A decreasing vibration sense is a sign of inadequate treatment. As the authors said, liver extract therapy completely controls the deficiency in pernicious anemia and cannot be replaced by folic acid therapy, which only partly controls the deficiency.

Dr. Hyman I. Goldstein, Camden, N. J.: In *The Review of Gastroenterology* (**9**:406-411 [Nov.-Dec.] 1942) I published an article, "Pernicious Anemia Alternating with Polycythemia (Polyglobulia)," and cited some cases of pernicious anemia in which a polycythemic response occurred during liver therapy. Has Dr. Haden met with such cases? Free hydrochloric acid was never noted in these cases. Dr. Haden decries the use of folic acid and (oral) hydrochloric acid and recommends the use of liberal parenteral doses of liver extract. Most of us are in accord with everything he propounded today. May I call attention to the early use of liver therapy in anemia by Paul Carnot, Maurice Perrin, of France, P. F. Castellino (1864-1933) and Alfonso Pirera (born Feb. 16, 1877) of Naples? Pirera fed dogs and rabbits liver (after they had been bled) and gave them injections of liver extract and liver juice (1910-1912). Perrin used liver and noted the improvement in the blood in patients with "alcoholic cirrhosis of the liver" (1904, 1905, 1908). Pirera (Tommasi **7**:601-617 and 625-636, 1912) noted that granulocytes were increased by liver therapy. In 1934, Murphy suggested the use of liver in granulocytopenia. James S. Combe (Tr. Med.-chir. Soc. Edinburgh **1**:194-204, 1824) reported a case of pernicious "idiopathic" anemia with necropsy long before Thomas Addison; and P. F. A. Marquis in 1846 wrote on "De l'influence de l'anémie sur le système nerveux," (Thesis, Paris, No. 1, 1846). No mention is made of the reports by E. Geddings (Baltimore M. & S. J. **2**:325-366, 1834) and "F.," a physician of Rhode Island (A Dissertation on Anemia, Boston M. & S. J. **20**: 101-108, 117-124 and 133-138, 1839). It is unfortunate that we are such poor linguists and so have overlooked and delayed the use of liver therapy in anemia for twenty or twenty-five years until the epoch-making article on liver feeding by Minot and Murphy appeared in The Journal August 14, 1926.

Dr. William P. Murphy, Boston: Through almost twenty-five years of experience in the treatment of pernicious anemia my colleagues and I have become convinced that it is one of the few diseases which can be treated entirely on a quantitative basis. There are few diseases in medicine which can be so treated, and it is up to us as individuals and also as a profession not to fumble the ball at this time, failing to treat our patients adequately or properly. Two circumstances make it possible and desirable to treat pernicious anemia on a quantitative basis. We have in this country liver extracts which are well standardized and well prepared. Unfortunately, there are few countries other than this where liver extracts are standardized. We also have available a simple and readily utilizable means of following the effect of treatment to determine whether or not it is adequate. In regard to liver extracts, I again wish to emphasize that the treatment of choice is by the parenteral route and with those extracts which are the most highly potent and refined rather than with the so-called crude extracts. A crude extract means simply that there are inert substances left in it which have no value in the treatment of pernicious anemia. One might say that it is crude therapy and not crude extract that we use at times. With the 15 unit, 1 cc. material, as a unit or basis for treatment, it has been our custom to give as initial treatment rather large doses. Thereafter we give 15 units each week, following the hemoglobin and erythrocyte levels at intervals of one to two months; as the levels reach or rise above normal, the interval between injections is increased. That is, we do not change the size of the dose, for I believe that there are certain objections to that in some patients, but we increase the interval between the dose up to two, three or four weeks, depending on the indications from the blood picture. This treatment is again followed for a period of months, during which time we check the blood at three month intervals. If the tendency is for the erythrocyte level to rise above the 5,000,000 mark, the interval between injections is increased; if the erythrocyte levels are falling during the sequence of counts, the interval between injections is shortened. In this way the blood levels are constantly under observation, making it possible for one to increase or decrease the intake of antipernicious anemia substance according to the need of each patient. Regulation of the dosage in this way, we believe, is the best assurance of an adequate supply of liver extract to prevent or to improve the difficulties which may result from spinal cord damage and to avoid the expense and inconvenience of overdosage. Some patients need injections of 15 units each week. A few need it oftener than that. Some of our patients are maintained with normal blood levels and with no complications produced by pernicious anemia with injections as infrequently as every four, six or eight weeks.

Dr. Russell L. Haden: If more than 15 units of liver extract is needed monthly we prefer to give a single injection of 30 units. This method works just as well, and the patient likes it better. It is most important to have a periodic check of the blood to determine the efficacy of treatment, as Dr. Murphy has emphasized. The treatment should be so regulated that the red cell count never fails. The first change in the blood if treatment is not complete is an increase in the size of the red cell best indicated by the volume index, so that we follow the volume index closely. The tongue is an excellent indicator also of the completeness of treatment. If the need for liver extract is not completely satisfied the characteristic clean smooth tongue of active disease quickly appears. The condition of the tongue should always be carefully observed. The question was brought up whether the red cell count will rise too high if an excessive amount of liver extract is given. Rarely a patient may have both pernicious anemia and idiopathic polycythemia vera. When liver extract is given during the pernicious anemia phase, the polycythemia vera becomes active and the red cell count becomes very high. We have one such patient under observation now. Dr. Goldstein raises the question of who was responsible for liver therapy. Dr. Osler long ago emphasized that the credit for a discovery in medicine should go to the person who convinced the world and not to the person to whom the idea first occurred. Dr. George Minot and Dr. William Murphy were the discoverers of the value of liver in the treatment of pernicious anemia.

CARONAMIDE AND PENICILLIN

Serum Levels in Human Beings, Following Multiple Doses of the Drugs

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Numerous attempts have been made to increase the efficacy of penicillin in the treatment of infections by altering the rate of its absorption or excretion. Beyer and his associates have reported that caronamide (4'-carboxyphenylmethanesulfonanilide), though excreted only by the glomeruli, alters the specific renal tubular enzyme system responsible for the excretion of penicillin.[1] The excretion of penicillin is delayed, so that a higher concentration may be maintained in the blood for more prolonged periods. Other investigators have confirmed the original reports on the penicillin-enhancing effect of caronamide and have noted that the drug is relatively nontoxic when administered over short periods of time.[2]

There is difference of opinion concerning the dose of caronamide necessary to maintain an effective concentration of penicillin in the blood. Direct information on the absorption and excretion of caronamide in human beings has been lacking, since practical methods[5] of measuring the concentrations of the drug in the blood and urine have not been available until recently. Furthermore, the effects of the drug have been studied only during short courses or single interval periods of administration. If the drug has a cumulative effect, concentrations in the blood which might lead to dangerous toxic reactions could easily be produced during more prolonged courses.

The following study was undertaken in an effort to compare the effect of different doses of caronamide on the serum levels of penicillin and caronamide in human beings while the drugs were being administered simultaneously during a three day period.

MATERIALS AND METHODS

The 17 subjects used in this study were ambulatory convalescent patients at the North Carolina Baptist Hospital. All were under the age of 60, and none showed evidence of impaired cardiac, renal or hepatic function. The concentrating power of the renal tubules, as measured by the specific gravity of the urine in all patients and by the phenolsulfonphthalein excretion test in 10 patients, was within normal limits. Diet, salt and fluid intake were unrestricted. No medication was given during the test period which might affect the determination of the serum levels of penicillin and caronamide or interfere with the excretion of the drugs.

One hundred thousand units of commercial crystalline penicillin G[3] was given intramuscularly every four hours day and night for seven days. On the second, third and fourth days, caronamide[4] was simultaneously administered orally to 7 patients (group A), in doses of 2 Gm. every four hours day and night, and to 10 patients (5 each in groups B and C), in doses of 4 Gm. every four hours day and night. The intervals were arranged so that the drugs were always given one-half to one hour before meals to insure better absorption of the caronamide. One to three blood samples were taken daily on the first through the fourth days and on the seventh day. In groups A and B the samples were taken four hours after administration of the drugs and in group C two hours after administration. Serum was removed aseptically and stored at —20 C. Determinations of the penicillin and caronamide levels were then carried out by groups to minimize the technical variations.

Penicillin levels were determined by the dilution method. Serums were diluted serially in 0.5 cc. of tryptic digest beef heart broth, and 50,000 to 100,000 organisms from an eighteen to twenty-four hour culture of beta hemolytic streptococci (strain NY 5) were used as a reference inoculum; this inoculum is inhibited by 0.008 unit of penicillin per cubic centimeter, so that a minimum serum level of 0.0156 unit per cubic centimeter (charted as 0.02) can be measured. The tubes were inspected after 18 hours' incubation at 37 C., and in all cases the result was checked by streaking the broth on a segment of a blood agar plate. The end point was considered the tube in which no growth occurred; if a tube showed no visible growth, but a few colonies appeared on the blood agar streak, the value was recorded midway between that tube and the next tube showing no growth.

Levels of caronamide in the serum were determined by the method of Ziegler and Sprague, which utilizes the Evelyn photoelectric colorimeter.[5] Eighty to 90 per cent of the total caronamide is recovered by this procedure, but the amounts of bound and free drug are not differentiated. A small percentage of the colorimetric value is made up of unidentified metabolic products of caronamide.[1c]

RESULTS

Effect of Doses of Two Grams of Caronamide on Penicillin Level Four Hours After Administration (Group A).—The effect of 2 Gm. of caronamide, given orally every four hours, on the level of penicillin in the serum four hours after an intramuscularly administered dose of 100,000 units (group A) is shown in figure 1. The average of all determinations of penicillin in the serum in the group (indicated by a solid line in the chart) was 0.06 unit per cubic centimeter on the first day and 0.09 unit per cubic centimeter on the seventh day—the control periods before and after caronamide therapy, respectively. On the second day of the test—the day simultaneous caronamide and penicillin therapy was begun—the average was 0.1 unit per cubic centimeter; on the two successive days the average was 0.17 and 0.14 unit per cubic centimeter.

Moderate variations in concentrations of penicillin in the serum were observed in individual patients in group A during all phases of the test period. Three out of the 7 patients showed no significant effect from the administration of caronamide at any time; in the remaining 4, intermittent twofold to fourfold increases in the level of penicillin in the serum were observed on six occasions. In these subjects the rises occurred

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Dr. Meads is a Markle Scholar in Medicine.

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[1] (a) Beyer, K. H.: New Concept of Competitive Inhibition of the Renal Tubular Excretion of Penicillin, Science **105:** 94-95 (Jan. 24) 1947. (b) Beyer, K. H.; Miller, A. K.; Russo, H. F.; Patch, E. A., and Verwey, W. F.: The Inhibitory Effect of Caronamide on the Renal Elimination of Penicillin, Am. J. Physiol. **149:** 355-368 (May) 1947. (c) Beyer, K. H.; Russo, H. F.; Patch, E. A.; Tillson, E. K., and Shaner, G.: [illegible] Properties of 4'-Carboxyphenylmethanesulfonanilide [illegible] *Its Effect on the Renal Clearance of Compounds* [illegible] J. Pharmacol. & Exper. Therap. **91:** 272-287 (Nov.) 1947.

[2] (a) Seeler, A. O.; Wilcox, C., and Finland, M.: Enhancement of Blood Levels by Caronamide During Intramuscular Administration of Penicillin, J. Lab. & Clin. Med. **32:** 807-817 (July) 1947. (b) Strauss, E.; Richburg, P. L.; Saba, P. Z., and Alexander, J. E.: Enhancement of Plasma Penicillin Concentrations by Caronamide and Sodium Benzoate, ibid. **32:** 818-831 (July) 1947. (c) Crosson, J. W.; Boger, W. P.; Shaw, C. C., and Miller, A. K.: Caronamide for Increasing Penicillin Plasma Concentrations in Man, J. A. M. A. **134:** 1528-1532 (Aug. 30) 1947. (d) Shaw, C. C.; Boger, W. P.; Crossen, J. W.; Kemp W. W.; Ling, W. S. M., and Duncan, G. G.: Enhancement of Penicillin Blood *Levels in Man by Means of a New Compound, Caronamide,* Am. J. Med. **3:** 206-210 (Aug.) 1947.

[3] *The penicillin used in this study was supplied by* Wyeth, Inc., Philadelphia.

[4] Sharpe and Dohme, Inc., Philadelphia, furnished the caronamide used in this study. Dr. William P. Boger, associate medical director, made available to us the results of several of his studies prior to their publication.

[5] Ziegler, C., and Sprague, J. M.: A Colorimetric Determination of Caronamide, J. Lab. & Clin. Med. **33:** 96-100 (Jan.) 1948.

during the third or fourth days, after two or three days of combined therapy; in 5 of the 6 instances they were followed later in the same day by levels similar to those observed during the control periods before and after caronamide therapy.

Effect of Doses of Four Grams of Caronamide on Penicillin Level Four Hours After Administration (Group B).—The effect of 4 Gm. of caronamide, given orally every four hours, on the level of penicillin in the serum four hours after an intramuscularly administered dose of 100,000 units of penicillin (group B) is shown in figure 2. The average of all determinations of penicillin in the serum in the group was 0.065 unit per cubic centimeter on the first day and 0.04 unit per cubic centimeter on the seventh day. On the second day of the test the average level of penicillin in the serum was 0.063 unit per cubic centimeter; on the two succeeding days the average was 0.25 and 0.26 unit per cubic centimeter.

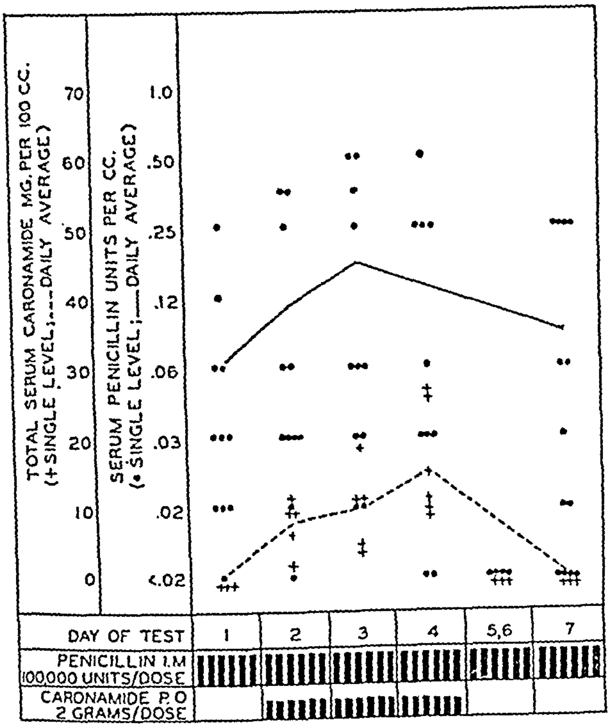

Fig. 1.—Effect of 2 Gm. of caronamide, given orally every four hours, on the serum level of penicillin four hours after an intramuscularly administered dose of 100,000 units of penicillin. (Group A.)

As with the lower dosage of caronamide (group A), variations in penicillin levels in the same patient and between patients in the group during the seven days of observation were moderately wide. Each of the 5 subjects showed at least one significant elevation in the concentration of penicillin in the serum; nine of the twelve significantly increased titers were observed in 2 patients. In these 2 patients the rises in titer were noted on four and five consecutive determinations, respectively, suggesting a sustained elevation in concentration. One of eleven samples taken on the second day showed a twofold rise in penicillin titer. On the third day six of ten samples showed a twofold to fourfold increase, and on the fourth day five of eight samples revealed a twofold to eightfold increase. Samples taken during the test period before the elevations occurred and after they subsided showed levels no greater than those obtained during the control periods before and after caronamide therapy.

Effect of Doses of Four Grams of Caronamide on Penicillin Level Two Hours After Administration (Group C).—The effect of 4 Gm. of caronamide, given orally every four hours, on the levels of penicillin in the serum two hours after an intramuscularly administered dose of 100,000 units of penicillin (group C) is shown in figure 3. The enhancing effect of caronamide on penicillin concentrations is more pronounced at this interval than at four hours. The average of all determinations of penicillin in the serum in the group was 0.08 unit per cubic centimeter on the first day and 0.05 unit per cubic centimeter on the seventh day. On the second day of the test the average level of penicillin in the serum was 0.57 unit per cubic centimeter; on the two succeeding days the average was 1.25 units per cubic centimeter and 1.06 units per cubic centimeter.

The effect of caronamide on penicillin levels two hours after administration was fairly consistent in each subject, but varied widely among the 5 subjects in the group. During the second day of therapy, ten of eleven blood samples showed a threefold to eightfold increase in penicillin concentration. The maximum effect was reached the following day; each of eleven samples had a fourfold to seventeenfold increase. On the fourth day, the penicillin concentration was slightly lower, though nine of ten samples showed a fourfold to thirteenfold rise in titer.

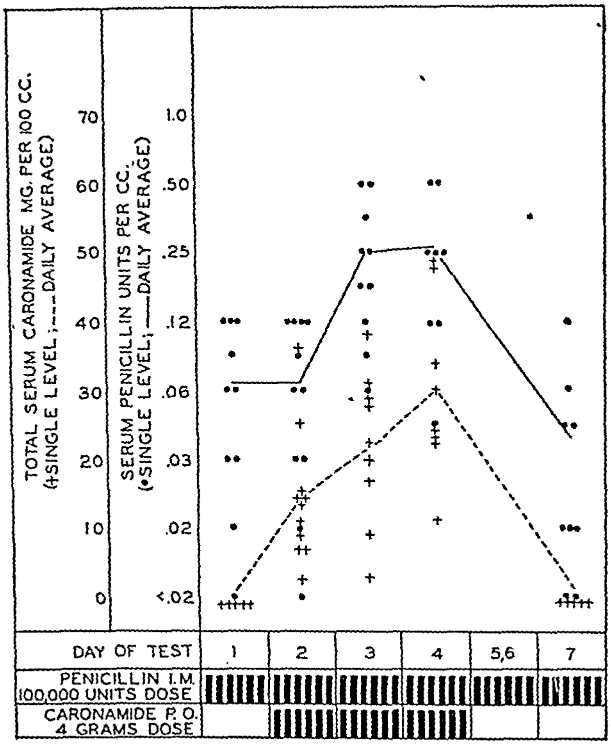

Fig. 2.—Effect of 4 Gm. of caronamide, given orally every four hours, on the serum level of penicillin four hours after an intramuscularly administered dose of 100,000 units of penicillin. (Group B.)

Serum Levels of Caronamide.—The levels of caronamide in the serum in groups A, B and C are plotted on figures 1, 2 and 3, respectively. The trends and variations closely parallel those for penicillin. The average concentrations (indicated by broken lines in the charts) rose progressively during the three days of caronamide therapy in all groups. With a dose of 2 Gm. every four hours, the average levels of caronamide in the serum four hours after administration (group A) were 7.8, 9.5 and 16.1 mg. per hundred cubic centimeters on the second, third and fourth days, respectively. With 4 Gm. every four hours, the levels of caronamide in the serum four hours after administration (group B) averaged 14.0, 21.7 and 30.3 mg. per hundred cubic centimeters on the second, third and fourth days. With a dose of 4 Gm., blood samples taken two hours after administration (group C) on these days showed average caronamide levels of 25.3, 38.6 and 46.2 mg. per hundred cubic centimeters.

The penicillin concentrations reached a peak on the third day and then leveled off. In the great majority of instances, a level of caronamide in the serum of 20 to 25 mg. per hundred cubic centimeters was necessary to produce a twofold rise in penicillin titer. When the blood concentration of caronamide was greater than 30 mg. per hundred cubic centimeters, the penicillin titer almost always showed an increase of fourfold or more.

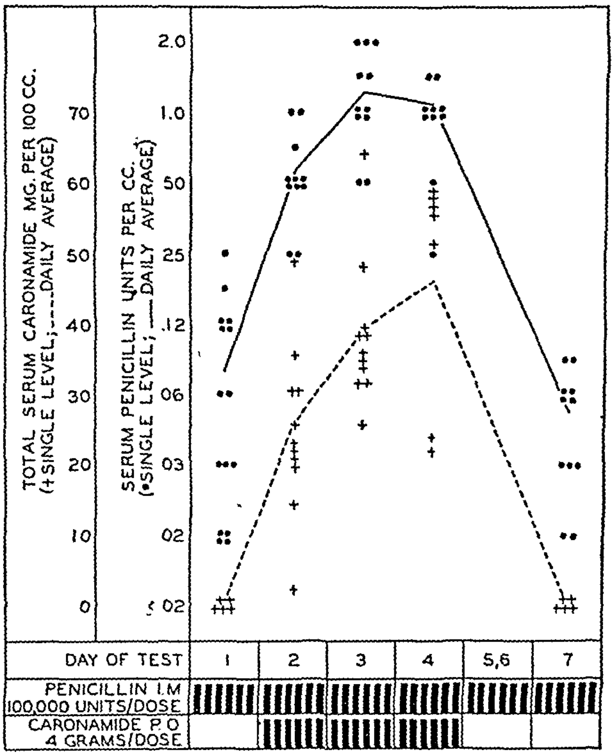

Fig. 3.—Effect of 4 Gm. of caronamide, given orally every four hours, on the serum level of penicillin two hours after an intramuscularly administered dose of 100,000 units of penicillin. (Group C.)

Toxic Manifestations.—Nausea occurred in 3 patients after thirty-six to forty-eight hours of continuous caronamide therapy in doses of 4 Gm. every four hours. In 2 instances the nausea occurred in the early morning and treatment with the drug was discontinued before blood samples were taken. In the third, nausea developed when the caronamide levels four hours after administration of a dose were 47 and 50 mg. per hundred cubic centimeters. Two patients had no complaints with caronamide levels of 50 and 60 mg. per hundred cubic centimeters two hours after administration of a dose. One patient vomited soon after receiving a dose of caronamide.

COMMENT

The results of this study indicate that caronamide has a cumulative effect when administered over a period of three days in doses similar to those which have been used by previous investigators during shorter intervals. The potentially toxic effects of caronamide suggested by these experiments call for a reevaluation of the use of the drug. The benefits achieved by raising the blood levels of penicillin must be balanced against the dangers of administering sufficient caronamide to secure this effect.

Effective Dose of Caronamide.—The enhancing effect of caronamide on the penicillin level in the blood varied not only in relation to the amounts of caronamide given, but also in different patients taking similar amounts of the drug. Multiple observations in 3 of the 7 patients receiving the smaller dose of caronamide revealed effective levels of the drug on only two occasions; these levels occurred in the same patient on the last day of the test and could be attributed to a cumulative effect. In the majority of 10 patients who received the larger dose, effective caronamide levels were present during the entire three day test period. These levels were observed two hours after administration of the drug on all days and four hours after administration on the second and third days. The cumulative effects of caronamide therapy were most apparent in the group receiving the larger dose.

In most instances serum levels of caronamide of 20 to 25 mg. per hundred cubic centimeters were necessary before a twofold increase in concentration of penicillin in the serum was noted. Caronamide levels of 30 mg. or more per hundred cubic centimeters resulted in a fourfold to seventeenfold enhancement of penicillin concentration two to four hours after administration of a dose. These observations are similar to those made in 2 patients by Boger, Kay, Eisman and Yoeman, who observed that 20 to 30 mg. of caronamide per hundred cubic centimeters of serum were required to inhibit the excretion of penicillin by normal renal tubules.[6]

It would, therefore, appear that caronamide levels approximating 30 mg. per hundred cubic centimeters of serum are necessary for an effective increase in levels of penicillin in the serum. Beyer and his associates have observed in dogs that a uniform blood level of caronamide is readily achieved by a large initial dose of the drug, followed by a smaller maintenance dose.[1b] It would appear that a similar dosage schedule is indicated in human beings to maintain an effective serum concentration of caronamide without the dangers of cumulative effects.

Seeler, Wilcox and Finland [2a] observed that relatively low doses of caronamide are effective in enhancing serum levels of penicillin in patients more than 60 years old. They suggest that the decreased tubular mass commonly present in aged persons is responsible for this.

Application to Penicillin Therapy.—In view of the demonstrated effectiveness of caronamide in raising serum levels of penicillin, the drug would appear to be a useful adjunct in the treatment of certain types of infection, provided that its potential dangers are not too great. In most infections caused by penicillin-susceptible organisms effective levels of the antibiotic are readily attained. Whether caronamide will be found to have a place in the treatment of such infections is an economic question that will depend on the eventual cost of caronamide and penicillin. In some infections due to susceptible organisms effective serum levels can not be attained economically with penicillin alone. An example of such an infection would be a localizing abscess, where higher serum levels are necessary to penetrate a relatively avascular or necrotic inflammatory barrier. In such cases caronamide would be useful in achieving serum levels of penicillin not attainable without prohibitively expensive doses of penicillin alone.

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[6] Boger, W. P.; Kay, C. F.; Eisman, S. H., and Yoeman, E. E.: Caronamide, a Compound That Inhibits Penicillin Excretion by the Renal Tubules, *Applied to the Treatment of Subacute Bacterial Endocarditis,* Am. J. M. Sc. **214**: 493-502 (Nov.) 1947.

Infections due to organisms of low susceptibility or to usually susceptible organisms which have acquired a moderate degree of resistance sometimes respond to high concentration of penicillin in the blood stream. Effective levels can occasionally be achieved by massive doses of penicillin, and this method has been employed in cases of subacute bacterial endocarditis due to relatively resistant strains of organisms. Penicillin alone is a drug of low toxicity, even in massive doses. Additional experiments are necessary before a definite conclusion can be reached as to the value of caronamide given over a long period in such infections. The higher and more effective serum levels of penicillin which could be achieved thereby might decrease the tendency toward the development of drug fastness and shorten the total course of the illness.

Toxicity of Caronamide.—Three of the 17 patients in this study became nauseated, and 1 vomited. Caronamide levels of 47 and 50 mg. per hundred cubic centimeters of serum were present four hours after a dose of 4 Gm. on the third day of treatment in 1 subject with persistent nausea. This symptom disappeared shortly after caronamide therapy was stopped. Unfortunately, treatment with the drug was discontinued before blood samples were obtained from the other 2 patients. This single observation suggests that in some persons the range between effective and toxic serum levels of caronamide may limit the usefulness of the drug. Strauss and his associates observed mild gastrointestinal disturbances in patients who were receiving caronamide, penicillin and sodium benzoate orally over a period of twenty-four hours.[2b] They were unable to determine which drug was responsible for these symptoms.

Evidence of renal damage during the administration of caronamide was observed by Boger and his associates in 1 patient; in view of the time relationship, this damage may have resulted from cumulative caronamide serum levels.[6] This patient was receiving 3 Gm. of caronamide every three hours; on the eighth day of continuous administration, red and white cells appeared in the urine, accompanied with a slight rise in blood urea nitrogen and a decided drop in urea clearance. These abnormalities disappeared within a few days after caronamide therapy was discontinued.

The drug is similar in chemical structure to compounds of the sulfonamide group, which are known to cause toxic effects. Boger records Duncan's observation of a rash which was probably due to caronamide. One of us (G. T. H.) has seen a patient in another hospital who showed red and white cells in the urine, as well as nodules in the skin and subcutaneous tissues, painful hyperemic swelling of the interphalangeal joints and scaling of the skin. These observations suggest that caronamide like the sulfonamide drugs may produce changes similar to periarteritis nodosa.

Animal experiments on the toxicity of caronamide given over long periods are reported by Beyer and his associates.[7] Six dogs received caronamide in oral doses ranging from 0.4 to 1.5 Gm. per kilogram of body weight for a four week period. No consistent effect on the amounts of creatinine, urea and nonprotein nitrogen in the blood or on the content of creatinine, urea nitrogen and total nitrogen in the urine was noted. At the end of the test period no abnormal microscopic changes were observed in renal sections. The experimental conditions were optimal for preventing renal damage and limiting drug accumulation. Young dogs were used; the test diet produced a relatively alkaline urine, and the high fluid intake resulted in a large daily output of urine with a low specific gravity.

Studies on human subjects over short periods of time have revealed no definite symptoms or laboratory observations suggestive of renal damage. Children given caronamide over a period of one or two weeks in daily doses of 0.1 to 0.4 Gm. per kilogram of body weight showed no definite toxic effects.[2a] Longer periods of study in human beings are necessary for final evaluation of the potential toxicity of caronamide.

NEED FOR PHARMACOLOGIC STUDIES IN HUMAN BEINGS

Most studies on caronamide in human beings have been based on a single dose or on the administration of the drug over a period of twenty-four hours or less. Long term studies employing doses of 3 Gm. every three hours or 4 Gm. every four hours, as are being recommended, are urgently needed.

Caution should be urged in the use of the drug pending further evaluation by many investigators. At present it would appear wise to control treatment by testing the caronamide level once or twice a day, two hours after administration of a dose of the drug. In addition, a liberal intake of fluid should be given to maintain an adequate daily output of urine.[8]

SUMMARY AND CONCLUSIONS

Caronamide raises the penicillin concentration in serum when both drugs are administered simultaneously over a period of three days.

Ordinarily a serum level of 25 mg. of caronamide per hundred cubic centimeters is necessary to achieve a twofold increase in penicillin concentration in the serum; caronamide levels exceeding 30 mg. are necessary to increase the penicillin concentration fourfold or more.

Doses of 4 Gm. every four hours are necessary to achieve a caronamide level of 30 mg. per hundred cubic centimeters of serum four hours after the oral administration of the drug.

A cumulative effect was noted with both doses of 2 and 4 Gm. of caronamide given orally every four hours during the three days of continuous treatment. Maximum penicillin levels were achieved after two days of combined treatment

Mild toxic effects were produced by levels of caronamide required to achieve effective enhancement of penicillin concentrations in the serum; other writers have noted severer reactions.

Caronamide should be used with caution until long term pharmacologic studies in human beings are completed. Until this time it is strongly suggested that the blood level of caronamide be followed and adequate urinary output maintained during treatment, particularly in cases in which decreased renal function is suspected.

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[7] Beyer, K. H.; McKinney, S. E.; Tillson, E. K., and Green, C. W.: 4'Carboxyphenylmethanesulfonanilide (Caronamide): Its Toxicologic Effects, J. Pharmacol. & Exper. Therap. **91**: 263-271 (Nov.) 1947.

[8] Earle, D. P., Jr., and Brodie, B. B.: The Renal Excretion of 4'-Carboxyphenylmethanesulfonanilide (Caronamide), J. Pharmacol. & Exper. Therap. **91**: 250-254 (Nov.) 1947.

WHAT IS PSYCHOTHERAPY TO THE INTERNIST?

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Baltimore

Study and treatment of the patient as a whole implies a psychologic as well as an organic approach and requires the combined endeavor of clinicians and psychiatrists. Many internists carelessly or by design develop a technic which obviates grappling with the patients' psyche. One group emphasizes the importance of the subtle art of physical diagnosis and spotlights the discovery of a faint diastolic murmur or the tip of a palpable spleen, while a second group divert themselves and each other by a complicated study of the chemical dislocations of various syndromes. A third group specializes in every available drug and synthetic preparation, and to this group each symptom or threat of a symptom calls for a therapeutic order. To all of these groups the business of ministering to the psychologic aspects of disease is someone else's obligation. If the patient is neurotic, let him be sent to physicians who specialize in neurosis. I suspect that the physicians in these three groups, and there are other similar groups, unconsciously, at an early stage, began to avoid involvement in the complex and illusive aspects of human nature. They are inept when dealing with personalities and therefore tend to consider psychiatrists unnecessary except for psychotic patients. They inveigh against the tendency to invite psychiatrists in to the study of cases before all organic disease has been eliminated. Some of them think that psychoanalysis is inadequately substantiated. Others believe that analysts, when they delve into the personality structure, using the theoretical concept of symbolism of the unconscious, will find abnormalities in every person which they will attempt to rearrange into a "normal" pattern.

Perhaps I have said enough to give an inkling of the tremendous prejudice I have noticed throughout the medical profession against admitting formal psychologic or psychiatric approach to all medical patients. I shall not belabor the point further nor attempt to defend or condone psychiatry or psychosomatic medicine. What I shall try to do is to clarify the significance of the straws that are blowing past in ever increasing numbers in the stiff breeze of scientific study of the psychologic aspects of organic disease.

In former years the psychology of medicine was learned only by observing how experienced clinicians handled sick human beings. This aspect of the care of patients came to be distrusted in the time of Osler, Shattuck, Delafield and the other leaders of the systematic study of medicine. They became preoccupied with developing and improving accurate diagnosis. The zealous search after etiologic factors, coupled with the discovery that many of the time-honored drugs in the pharmacopeia were inert, inevitably concentrated attention on treatment in those cases in which diagnosis could be substantiated and therapeutic results could be accurately measured. The power of suggestion by placeboes was recognized, but was utilized mainly as a control in studies of drug therapy.

During this period psychiatry, independently, was making great progress, although in most instances it was isolated in mental institutions which were far away from hospitals for medical and surgical cases. As it became apparent that many medical cases had important psychologic aspects as well, the psychiatrists were consulted. Appel,[1] writing about psychiatric therapy, stated:

> When a patient comes to the doctor he is in an attitude of expecting relief not only from his physical symptoms but from his insecurity. It is important for the physician to be aware of this psychological tradition even if he is treating an organic illness, and to use suggestion constructively and not destructively. It is here that the physician's manner and bearing are so important. Indefiniteness, lack of assurance, uncertainty, undue gravity, or silence may be devastating to the patient. Such behavior feeds his imagination and apprehension with all sorts of forebodings. A hasty word or an incomplete explanation may leave the patient with almost unbearable insecurity or fright.

The introduction of psychiatric thinking into medical problems soon uncovered a wide field, the exploration of which has come to be known as psychosomatic medicine. This departure from the orthodox concept of internal medicine has not been easily accepted. It is confused by some with that part of the psychologic approach to patients which seemed to be well handled by our grandfather general practitioners but has been lost sight of by the specialists of today. To others the psychiatric explanation of common symptoms still sounds strange. For instance, Saul[2] discussed hunger pains as follows:

> In the gastric ulcer cases the impulses involved are apparently less various, and consist more specifically of frustrated desires for love, care, dependence and the like. These have become so intimately associated with the functioning of the stomach that cravings for them cause the stomach to behave physiologically just as though they were expecting food.

This is difficult for many physicians to agree to without reservation or to consider as fundamentally important from an etiologic point of view.

With recognition of this strong antagonism to the application of anything even suggestive of a freudian approach to somatic problems there still is much general interest in the rapidly growing mass of evidence which tends to show the functionally intimate interrelationship between psyche and soma, mind and body, the consciousness, on the one hand, and needs, urges, responses to the environment (especially parental behavior) on the other.[2a] As internists we should encourage the correlated studies of emotions and bodily changes, but meanwhile we must recognize that, like it or not, we are implicated in our patient's emotional reactions to disease and must apply ourselves to this problem. Before the days of Lister it was no mistake to put dirty hands into a wound. Today such a blunder would not be countenanced by a trained nurse or medical student. Today we must avoid comparable breaks in technic of psychotherapy.

ILLUSTRATIVE CASES

The following cases illustrate breaks in technic which happen every day. The physician, as Kanner[3] said, "means no harm."

CASE 1.—A 27 year old man had been known to have congenital cardiac disease from infancy. His parents, with good medical advice, had brought him up to take part in all games

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Read before the Section on Internal Medicine at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

[1] Appel, K. E.: Psychiatric Therapy, in Hunt, J. M.: Personality and the Behavior Disorders, New York, The Ronald Press Company, 1944, vol. 1.

[2] Saul, L. J.: Physiological Effects of Emotional Tension, in Hunt, J. M.: Personality and the Behavior Disorders, New York, The Ronald Press Company, 1944, vol. 1.

[2a] Cobb, S.: Borderlands of Psychiatry, Cambridge, Mass., Harvard University Press, 1943.

[3] Kanner, L.: In Defense of Mothers, New York, Dodd, Mead & Company, Inc., 1941.

and athletic activities that his associates indulged in, and he had played on his high school baseball team. After college he had gone into farming, with hunting long hours in field and forest as his major relaxation. From time to time he had been carefully examined and always had accepted the advice for moderate caution that wise physicians had given him. Recently, he had grippe with high temperature, tachycardia, headache and general malaise. The local physician was called and treated him. Two days later, his temperature having fallen to normal and his general condition having become greatly improved, the local physician casually said to the patient, "I surely am glad you are better. I never saw a worse heart than yours was two days ago." From that time on he became heart conscious, aware of extrasystoles and bothered by faintness and palpitation. He limited his activities and lost much of his former *joie de vivre*. His local physician had planted ineradicably the seeds of worry and fear in this courageous young man's imagination and, in fact, changed his entire life.

Case 2.—A woman of 44 consulted a physician for a minor ailment. During the checkover her blood pressure was observed to be 220 systolic and 130 diastolic. The physician clearly showed his amazement by his questioning of the patient when he said, "Don't you ever have severe headaches? Aren't you conscious of your heart pounding? Don't you ever get dizzy? Don't you ever get short of breath?" And finally, "Well, you certainly should have some or all of those symptoms with that blood pressure." From then on she became anxious about her health for the first time, and began to experience some of the symptoms her physician had called to her attention.

Comment.—In these 2 cases the symptoms became apparent to the patient directly following ill considered remarks of the physician which resulted in anxious concern and depression. The power that even their lightly spoken words have to instil fear into the minds of patients often is overlooked by physicians. A veritable chain reaction may be set in motion. To an imaginative timid person high blood pressure quickly leads to thoughts of apoplexy, paralysis and death. A cardiac murmur means heart trouble and impending sudden death. In this day of popular medical education in magazines and newspapers, the man on the street always has preconceived notions of cause and effect and of the dangers of most diseases. Therefore, it becomes necessary for the physician to be aware of all the little or big ideas that may act as entering wedges for fear into the patient's consciousness and avoid them or neutralize them on the spot. If the physical examination is discussed in the presence of the patient, abnormalities should be described in technical terms and should be cleared of alarming implications. We all see patients who tell us, "three doctors have warned me that I might have a stroke any minute" or "two doctors have said I might have a sudden heart attack." Actually what these doctors probably told their patients was that they did have some elevation of blood pressure or that there was something wrong with their hearts. What they did not see was the importance of convincing the patient that these conditions in most instances have little or no immediate danger and that what danger they hold may not be encountered for a long time or possibly not until the end of a normal span of years.

The following brief case history illustrates the gravity of misinterpreting the functional aspects of a case.

Case 3.—A 43 year old man was admitted with the complaint of a gastric ulcer, from which he was supposed to have had hemorrhages within the past two weeks. A year previously, on consulting a physician, he complained of hunger pains and acid eructation. He was told that he had ulcers and was put to bed for four weeks, limited to a milk and cream diet and given blunting powders. For a year thereafter he was kept on a meat-free soft diet, with greatly restricted activities, which precluded work. During this time he lost 25 pounds (11 Kg.). On admission to the hospital he refused to take anything but liquids and lay on his bed deeply depressed and constant in his complaints of abdominal pain. On several occasions he insisted that he had spit up blood from his stomach, although examination of gastric contents and six examinations of the stool, showed no blood. Roentgen and fluoroscopic examination did not reveal any organic lesion or scar, although pylorospasm and hyperacidity were present.

Comment.—The handling of this case demonstrates several of the most distressing results of breaks in therapeutic technic. The treatment itself convinced the patient of the alarming seriousness of the lesion in the stomach, which was a completely erroneous impression. The illness was permitted to drag on with ever increasing fixation of the conditioned invalidism, and the underlying nervous instability received no direct or indirect therapeutic consideration.

PSYCHOLOGIC FACTORS IN ORGANIC DISEASE

In order to avoid contributing to patients' anxiety over their illness and to allay their symptom-producing fears, one must be conversant with the mental aspects of numerous medical conditions. Many of these were brought into sharp focus during World War II. Neurocirculatory asthenia is no longer considered primarily cardiovascular in origin. Mucous colitis is more a symptom than a disease. Gastric ulcer is coming to be regarded by many as an organic complication of an underlying neurosis [4]; cardiospasm and pylorospasm are of the same type. The important possibility of a major role being played by psychic disorders in the causation of certain types of hypertension and of exophthalmic goiter [5] is recognized. Angina pectoris, allergic diseases, many forms of dermatitis, migraine, glaucoma and obesity—all are now known to be tremendously aggravated by nervous tension and anxiety. Too little attention has been paid to worry, anxiety and depression engendered by disease itself, since the best treatment of these mental states is the prompt and efficient correction of the underlying disease.

Although many able physicians make no effort to understand the psychologic implications of organic disease, some of the more sensitive ones tend to "soften the blow" too much, even to the point of deceiving the patient or of putting off important treatment for fear of alarming the patient. There are doctors who regularly tell their patients that their blood pressure is lower than it actually is. A little thought would show these physicians that their patients will see other doctors and that all doctors cannot hope to dissemble equally. It is far better to teach the patient that daily or hourly fluctuations in blood pressure may be so great that there is little significance in any single reading [6] and that therefore he is better off not knowing what it is.

LITERATURE

Internists will be interested in reading some of the excellent recent books on psychotherapy, such as the works of Levine,[7] Strecker and Ebaugh [8] and Oscar Diethelm.[9] He should be familiar with the Minnesota experiment described by Smith.[10] An extremely interesting collection of contributions by forty psychiatrists, psychologists and internists interested in psychosomatic medicine is to be found in the two volume work edited by Hunt.[11] Dunbar's book[12] summarizes the field of psychosomatic medicine. Internists should not avoid some of the books written primarily for pediatricians, since the end results of behavior problems in childhood often are encountered in adult patients. One such book was written by Isaacs,[13] and a book that no one should miss is one by Kanner.[3]

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[4] Wolf, S., and Wolff, H. G.: Evidence on Genesis of Peptic Ulcer in Man, J. A. M. A. **120**: 670 (Oct. 31) 1942.

[5] Means, J. H.: Thyroid and Its Diseases, Philadelphia, J. B. Lippincott Company, 1937.

[6] Thomas, H. M., Jr.. Management of Early (Beginning) Essential Hypertension, M. Clin. North America **23**: 487 (March) 1939.

[7] Levine, M.: Psychotherapy in Medical Practice, New York, The Macmillan Company, 1942.

[8] Strecker, E. A., and Ebaugh, F. G.: Practical Clinical Psychiatry, New York, The Blakiston Company, 1940.

[9] Diethelm, O.: Treatment in Psychiatry, New York, The Macmillan Company, 1936.

[10] Smith, G.: Psychotherapy in General Medicine, New York, The Commonwealth Fund, 1946.

The step from avoiding harmful malapropisms or destructive suggestions to making actual psychotherapeutic contributions and using suggestion constructively is not difficult. The psychologic aspects of every case should not be abandoned to psychiatrists, since internists are in better position to provide authoritative reassurance concerning the whole disease picture. Search for organic lesions must not be discontinued when psychotherapy is brought into the picture, because we all have seen cases in which neurotic symptoms have obscured serious organic disease.

HELPFUL TECHNICS

A simple method most medical practitioners find themselves using is a combination of suggestion and reasoning which is reinforced by their prestige and positive assertion. If the patient is to be helped he must be convinced by adequate explanation of the anatomic, physiologic and mental aspects of his case even though the explanation is tedious, time consuming and, often, difficult. It is improper to threaten the patient with dire results unless he obeys instructions, since this method is motivated by fear rather than reassurance.

Reassurance must be based on truth, since a structure built of falsehoods breaks down soon or late. Cabot[14] felt very strongly on this point. However, we must constantly remind ourselves that what appears to be the truth of medical explanation today may be far from the truth tomorrow. Also, the words we utter as a true statement may be interpreted by the patient to mean something entirely different. There can be no sure way of reaching or imparting a durable absolute truth. Therefore, we should be careful not to force on an unwilling patient disagreeable or alarming statements which we think are true. Gentle probing into the patient's attitude and wishes will reveal the correct course to pursue in his particular case and how much definite information he needs and really desires. Hope need never be completely destroyed even though false hope should be removed lest patients with irreversible lesions continue a futile quest for unattainable cure.

It is impossible to overemphasize the value of hope to the patient. Hopefulness developed through a true understanding of the symptoms can be translated into a desire for and an effort toward improvement.[15] Solomon knew the importance of this when he said in the Book of Proverbs, "Hope deferred maketh the heart sick: but when the desire cometh, it is a tree of life."

An ill timed effort at humor may infuriate or wound the patient, yet the physician's sense of humor is a magnificent therapeutic instrument. Unfortunately, psychiatric instruction gives us little or no help in its use. If the doctor can find a neutral object about which he and the patient can laugh, then the tension is lessened and a sense of friendliness and common purpose established. The introduction of humor must not conflict with the serious and thorough consideration of the patient's complaints. We may not be too casual on the one hand or too much concerned on the other. The only sure way of reaching the proper attitude is to understand the patient's thoughts and anxiety reactions and to watch very closely the nature of his responses with a sensitive appreciation of what persons usually worry about in the particular situation.

SUMMARY

Psychotherapy is treatment of the patient through his mind. I have not attempted to describe current technics used by psychiatrists. My purpose has been to justify psychotherapy as an integral part of every contact with patients and to indicate each physician's obligation to participate. This can be accomplished efficaciously only by keen awareness of accepted psychosomatic and psychiatric concepts and by a well integrated approach to the human being who is ill.

ABSTRACT OF DISCUSSION

Dr. Francis J. Gerty, Chicago: Dr. Thomas is to be congratulated on his valiant effort to attempt to tell you what psychotherapy is. A great many things have been called psychotherapy, and a great many things that have been psychotherapy have been called something else. Many years ago when I was a resident, an eminent neuropsychiatrist used to call on me to take his practice when he went on vacation. This man was successful in treating patients with functional disorders. He did not believe much in psychotherapy, beyond the fact that the physician should be a man of character and be honest with his patient. He did believe that psychoneurotic patients needed a sedative, a tonic and an increase in the supply of iodine sometimes, so he had a certain sedative mixture to which the druggist appended his name. He gave them sodium cacodylate by mouth. When he died, people in his office used to send his patients to me; I lost all of them, because his remedies did not work with me. The patients came to the conclusion that this man had had some secret formula and that that had died with him. The secret ingredient was the man, and this is an ingredient in all psychotherapy. We can apply the term "psychotherapy" to a great many things—placebo, bedside manner, reassurance, suggestion, hypnosis and psychoanalysis—but all of this is not very helpful when we attempt to make psychotherapy useful in our practice. We must look on psychotherapy, or at least psychotherapists, much as we look on the other remedies, as far as testing them out and weighing them are concerned. We are just beginning to look at psychotherapy this way. We are trying to examine honestly what elements enter into the matter of psychotherapy. There is an unconscious factor in psychotherapy which must be studied and of which we must become much more conscious. It is more important that the physician remove these in himself than that he set about removing them in the patient. This means that he must have a definite feeling for his patient; the patient will reciprocate with feeling on his part, and with this mutual feeling psychotherapy can be carried forward intelligently.

Dr. Thomas: I believe that the two points that have impressed me most in considering this general subject are: First, the psychologic aspects of treatment of the patient should always be present in the physician's mind, and, second, we must not allow our approach to the patient's psyche to remain amateurish, but by reading and thinking about it we must develop a superior type of psychotherapy which has its foundations on sound internal medicine.

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[11] Hunt, J. M.: Personality and Behavior Disorders, New York, The Ronald Press Co., 1944.

[12] Dunbar, H. F.: Emotions and Bodily Changes, ed. 3, New York, Columbia University Press, 1946.

[13] Isaacs, S.: The Nursery Years, New York, The Vanguard Press, Inc., 1938.

[14] Cabot, R. C.: Use of Truth and Falsehood in Medicine: Cartright Lectures, New York Academy of Medicine, December 1902.

[15] Menninger, K., and Menninger, J. L.: Recreation for Morale, Bull. Menninger Clin. 6:96 (May) 1942.

EVALUATION OF CANCER CONTROL METHODS IN CONNECTICUT

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Analysis of the first total tables from the record registry in Connecticut enables one to evaluate cancer control methods for the past twelve years. The sources of factual information are the death rates, the attendance of patients with cancer at the clinics or general hospitals, the intervals of delay between symptoms and treatment and the attendance of physicians in the mutual educational program.

The age-adjusted cancer death rates are shown in table 1.[1]

The age-adjusted male cancer death rate has risen during the twelve year period, but appears to be leveling. The female age-adjusted cancer death rate has fallen. Since the average duration of life of all cancer patients is two years from the onset of the disease, the mortality rates of any year actually are a measure of events of two years before a retroactive index of progress. With this thought in mind, the gradual leveling of the total age-adjusted mortality rates in Connecticut is an encouraging sign.

The incidence rate of cancer as recorded in the record registry has increased with consistency, as shown in table 2.

The increase in the incidence rates as demonstrated in this table reflects the improvement in services rendered to persons in this state by every new measure introduced to increase the understanding of cancer. Within two years of the establishment of the division for cancer in the State Department of Health, a remarkable increase in hospital and clinic attendance of persons with cancer was noted. The publicity attendant on and the effort made by this new unit was undoubtedly responsible for this. In 1938, with the active organization of the Association of Connecticut Tumor Clinics and the attendant establishment of new clinics, another big increase in recognized treated cancer occurred. In 1941, the distribution of state funds to each of the general hospitals, the systematic backtracking of all cancer from 1935, the development of the state record registry and the establishment of universal follow-up of all cancer patients through the Division of Cancer and Other Chronic Diseases resulted in a dramatic increase in recognized treated cancer. In 1944, with the first successful drive of the Connecticut Cancer Society on a statewide basis, another increase occurred in recorded new cases of cancer. In 1946, with the inauguration by the Division of Cancer and Other Chronic Diseases of the popular and instructive Mutual Education Program, whereby four times a year three physicians from each general hospital visit another general hospital in the state and attend its cancer clinic, another increase in recognized cancer occurred. It was felt from an evaluation of the results on the records in the record registry that the general level of medical service was high in this state and that, by sharing, the whole level could be raised more quickly than by any other method. The token remuneration and expenses paid to each visiting physicians are furnished through the State Department of Health. All of these improvements have been made by the consistent effort to expand existing facilities to adequacy in the most universal and least disruptive way and with as little additional expense as possible.

The total incidence rates suggest but do not give sufficient detail to make clear the extent to which this voluntary registry of cancer has become adequate for obtaining the true picture of cancer morbidity. Checks with the death records and contacts with surrounding states and famous medical clinics make it possible for nearly every case of cancer to be known to this registry. Hospital insurance held by an estimated 40 per cent of the population of the state has encouraged the ready use of these facilities even by some persons who might not actually need hospital care. It is realized that cases of cancer of the skin treated in physician's offices are missed. Despite this, 9.5 per cent of cancer reported to this registry is cancer of the skin. Table 3 gives the incidence rates per 100,000 population in Connecticut by site and sex for the year 1945. This gives a clear picture of the size of the problem as it pertains to new cases.

TABLE 1.—*Age and Sex Adjusted Mortality Rate*

Connecticut 1935-1946, per 100,000

	Mortality Rate		
Year	Male Patients	Female Patients	Total
1935	102.9	120.3	111.6
1936	103.7	115.3	109.3
1937	101.2	114.0	107.3
1938	113.7	117.1	114.9
1939	108.6	116.8	112.3
1940	117.9	119.7	118.3
1941	115.6	120.2	117.6
1942	116.4	121.0	118.0
1943	113.8	121.9	118.4
1944	111.5	124.5	118.5
1945	120.7	119.2	118.9
1946	118.6	119.6	119.1

TABLE 2.—*Incidence Rates for Cancer*

Connecticut 1935-1946, per 100,000

	Incidence Rates	
Year	Male Patients	Female Patients
1935	114.5	145.9
1936	123.8	145.8
1937	127.4	166.3
1938	142.1	172.2
1939	162.4	193.1
1940	167.3	183.9
1941	179.8	207.2
1942	190.9	215.8
1943	194.9	229.1
1944	217.0	251.1
1945	229.4	259.5
1946	254.2	260.6

A follow-up over a long period of time is a requirement if accurate appraisal is to be attempted in studying cancer control methods, since the end results of cancer cannot be obtained until years after the onset of the original lesion. The staff of the Division of Cancer and other Chronic Diseases has trained new workers and guided experienced ones in hospital after hospital in the technics of obtaining follow-up.[2] Since over half of all cases recorded in the registry are private cases, ingenious and tactful procedures had to be evolved to reach this frequently unfollowed group. It was found when the system of follow-up was finally general that over 1,500 patients treated for cancer from 1935 through 1940 had had no follow-up from the time of the discharge after initial treatment. Since that time, the proportion of untraced cases has been so small that

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Aided by a grant from the United States Public Health Service of the Federal Security Agency.

[1] Macdonald, E. J.: The Meaning of Adjusted Rates for Cancer, Connecticut Health Bull. **60:** 279 (Dec.) 1946.

[2] Griswold, M. H., and Macdonald, E. J.: Cancer Record Registry—How It Functions, Connecticut M. J. **11:** 344 (May) 1947.

there are fewer than 5 per cent of the nearly 38,000 cases in the registry lost to follow-up.

From January 1935 through December 1946, in this state of less than 2,000,000 population, there have been 37,863 persons with cancer treated and diagnosed for the first time, for whom there are records in the local hospital cancer record registry and in the state total cancer record registry. There are more females than males in Connecticut, especially in the older age groups. There are, therefore, more cases of some sites of cancer among females than would occur if the sex ratio were even. The Connecticut registry uses as an origin the appearance at the hospital or clinic because normally, if a diagnosis of cancer is made or suspected, the patient is admitted for treatment either simultaneously or within a few days.

TABLE 3.—*Incidence Rates for Cancer by Site by Sex**

1945, per 100,000

Site	Incidence Rates		
	Male	*Female*	*Total*
Skin			
Skin of head and neck	22.0	15.8	18.9
Skin of upper extremities	2.9	0.9	1.9
Skin of trunk	3.8	2.0	2.9
Skin of lower extremities	*0.9*	*0.9*	*0.9*
Skin (generalized, multiple or location not specified)	1.1	0.3	0.7
Total	30.8	19.9	25.4
Soft parts			
Soft parts of head and neck	0.8	0.5	0.6
Soft parts of upper extremities	0.6	0.3	0.5
Soft parts of trunk	0.9	0.5	0.7
Soft parts of lower extremities	0.7	0.6	0.6
Soft parts (generalized, multiple or location not specified)	...	...	...
Total	2.9	1.8	2.4
Skeletal system			
Skull (including tumors of dental origin)	0.3	0.8	0.6
Spine (excluding sacrum and coccyx)	0.2	0.1	0.1
Bones of upper extremities, scapulas and clavicles	0.5	0.5	0.5
Bones of thorax (ribs, sternum)	...	0.1	0.06
Pelvis (including sacrum and coccyx)	...	0.3	0.2
Bones of lower extremities	0.2	0.6	0.4
Bones of skeleton (generalized, multiple or location not specified)	0.8	0.5	0.6
Joints and synovial membranes	...	0.1	0.1
Total	2.0	2.9	2.5
Central nervous system			
Brain and membranes	3.9	3.4	3.6
Spinal cord and membranes	0.6	0.3	0.5
Total	4.6	3.7	4.1
Upper respiratory and alimentary tracts			
Lip	5.5	0.9	3.2
Mucosa of cheek	0.8	0.2	0.5
Gingiva (or gum)	0.2	0.2	0.2
Palate	0.6	0.1	0.3
Floor of mouth	0.9	...	0.5
Tongue	2.3	0.7	1.5
Tonsil	0.6	0.3	0.5
Nasal cavity	0.2	0.2	0.2
Nasopharynx	0.6	0.1	0.3
Pharyngeal wall	0.7	0.3	0.5
Extrinsic larynx	3.1	0.5	1.8
Intrinsic larynx	1.6	0.3	0.9
Paranasal sinuses	1.0	0.3	0.7
Oral mucous memt eralized, multiple	1.6	0.6	1.1
Total	10.7	4.9	12.3
Miscellaneous structures of head and neck			
Eye, orbital cavity and conjunctivas	0.6	0.8	0.7
Mastoid cells and middle and inner ear	0.1	0.2	0.2
Salivary glands	2.5	2.8	2.6
Thyroid and parathyroid	0.2	2.4	1.3
Total	3.4	6.2	4.8
Breast			
Breast	1.4	67.5	34.5
Nipple	...	0.1	0.06
Total	1.4	67.6	34.5
Viscera of the chest cavity			
Trachea, bronchial tree and lungs	19.0	2.6	10.8
Heart, pericardium and aorta	...	...	...
Esophagus	6.8	1.7	4.3
Mediastinum	0.6	0.8	0.7
Total	26.4	5.1	15.7
Abdominal cavity viscera			
Diaphragm, peritoneum, mesentery and unclassified abdominal tumors	1.3	2.3	1.8
Stomach	22.2	10.9	16.5
Liver, gallbladder and ducts	2.5	3.2	2.8
Pancreas	6.3	5.3	5.8
Spleen	...	0.1	0.06
Small intestine	1.0	1.4	1.2
Large intestine, right	*5.7*	*8.2*	6.9
Large intestine, left	14.7	32.4	15.4
Large intestine (generalized, multiple or location not specified)	3.4	4.9	4.1
Rectum	16.9	9.3	13.1
Anus	0.2	0.2	0.2
Total	74.2	61.9	68.0
Urinary tracts,			
Kidney	3.6	3.3	3.5
Adrenal	0.2	0.1	0.2
Ureter	...	...	...
Urinary bladder	10.4	4.3	7.4
Urethra	0.3	0.5	0.4
Total	14.7	8.2	11.4
Genital tract and external genitalia, male			
Prostate, seminal vesicles and adnexa	23.4	...	11.7
Glans and foreskin of penis	0.3	...	0.2
Testis, epididymis, spermatic cord	1.4	...	0.7
Total	25.1	...	12.6
Genital tract and external genitalia, female			
Corpus of uterus	...	20.0	10.0
Cervix of uterus	...	27.9	13.9
Ovaries	...	9.9	4.9
Fallopian tubes	...	...	...
Vagina	...	0.6	0.3
Labia minora and clitoris	...	0.7	0.3
Total	...	59.2	29.6
Systemic diseases			
Total	13.9	9.1	11.5
Metastatic cancer (generalized), no primary site discovered	10.1	8.9	9.5
Grand total	229.4	259.5	244.5

* The nomenclature used is the nomenclature of diagnoses of the Memorial Hospital for the treatment of cancer and allied diseases, New York.

The percentage of male and female patients treated within one month, four months and six months of first symptoms is shown in table 4.

About one fifth of both male and female patients over the entire period have been treated within one month of first symptoms. About 40 per cent of both groups are treated within four months of first symptoms, and about half are treated within six months of first symptoms.

The survival rates are the criteria of measurement used[3] in discussions of the over-all cancer picture in this registry. For each of the sites as it is studied separately, a clinical check within weeks of presentation of the study will be sought of all patients living, to determine with reasonable accuracy the rate of cure as well as the survival rate. A patient not checked clinically within twelve months of any report of this registry is considered untraced. In order for a patient to be declared cured, however, an immediate check of each case is a necessity; so many factors alter the accurate description of cures and survivals. The age of the patient is so high at the time of onset and treatment that frequently death from other causes precludes determination of the results of cancer therapy. The average age at the time of treatment in Connecticut for the total period for female patients is 55.4 years and for male patients 59.6 years. Buried in this average is a wide and surprising range of years at the time of treatment according to the site of cancer and sex. Table 5 gives the average age at the time of treatment by selected sites of cancer.

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[3] Macdonald, E. J.: Survival Rates of Individuals Who Have Had Proved Cancer in Connecticut—1935-1942, Connecticut Health Bull. 58:2 (Nov.) 1944.

The proportionate age distribution by sex for total cancer is given in table 6. Comparable proportions are given by sex for those persons living as of April 1947. Among male patients 29.6 per cent of the total were between 60 and 69 years of age at the time of treatment, 19.9 per cent were between 70 and 79 and 4.7 per cent were over 80. Among female patients, 23.8 per cent were 60 to 69 years of age, 12.6 per cent were from 70 to 79 and 2.7 per cent were over 80 at the time of treatment. The survival rates among male patients are lower than among female patients. When it is observed that one fourth of all male patients in the registry came for treatment or diagnosis after the age of 70, one extremely important probable cause for a shorter period of survival becomes apparent. Another 29.6 per cent were between 60 and 69 at the time of treatment or diagnosis.

Table 4.—*Percentage of Cancer Patients Receiving Treatment Within One, Four and Six Months of First Symptoms*

	Percentage of Patients					
	One Month		Four Months		Six Months	
Year	Male	Female	Male	Female	Male	Female
1935	19.1	18.4	38.1	39.5	47.0	50.3
1936	19.7	23.3	37.5	37.0	47.8	49.7
1937	14.6	20.9	37.6	40.4	47.2	50.1
1938	19.7	22.4	38.2	40.0	50.9	49.6
1939	21.7	20.6	39.9	39.7	49.3	49.2
1940	23.9	20.4	41.0	40.2	50.6	51.4
1941	24.3	25.3	41.0	43.2	50.6	51.2
1942	25.3	23.3	42.8	44.3	50.7	54.2
1943	25.0	24.7	41.6	43.2	51.7	53.0
1944	23.3	22.4	42.7	43.5	52.1	52.0
1945	24.1	20.1	42.1	40.6	51.6	50.5
1946	23.8	20.6	42.8	40.2	50.9	48.8

Table 5.—*Average Age at Time of Treatment by Selected Sites of Cancer*

	Average Age of Patients	
	Male	Female
Skin of head and neck	64.6	62.7
Skin of upper extremities	64.9	57.9
Skin of trunk	59.7	60.3
Skin of lower extremities	57.3	46.4
Skin (generalized)	62.8	61.0
Lip	63.1	62.4
Tongue	61.3	57.5
Intrinsic larynx	62.0	57.5
Eye	49.6	57.4
Breast	58.1	55.8
Lungs	57.2	56.3
Large intestine (right)	57.7	55.8
Large intestine (left)	60.9	58.9
Large intestine (location not specified)	59.6	56.9
Rectum	56.5	57.7
Kidney	54.5	50.8
Urinary bladder	62.6	64.4
Prostate	70.4	....
Testis	38.5	....
Corpus of uterus	....	57.3
Cervix of uterus	....	51.5
Ovaries	....	52.1
Total	59.6	55.4

Comparison of the totals of the average age at the time of treatment and the percentage distribution of male and female patients living as of April 1947 shows the living as slightly younger, but without as great a difference as was expected.

One of the most encouraging features of a functioning registry which includes active follow-up of all living patients is the knowledge of the large number of persons who have survived treatment for cancer for more than five years. In Connecticut, there are over 3,000 living five to twelve years after treatment. Expressed another way, there are 174.5 persons out of every 100,000 in the population who have survived treatment for cancer for more than five years—128.9 per 100,000 males and 220.1 per 100,000 females. Also living in Connecticut are 9,000 other persons who have been treated for cancer within the last five years. Each passing year a larger number and a larger percentage of the total reach the five year survival mark, which often means safety.

Over the twelve year period under study, the total cancers have been grouped by site and by sex to determine the percentages of cancer of accessible sites in their relative proportion to the whole series. Table 7 gives the percentage distribution by sex and by site of certain cancers normally considered accessible.

One third of the cancers among male and two thirds among female patients are accessible. To the improvement of the prognosis of these types of cancer every educational effort should be bent. A recent study[4] measuring changing reasons for delay by certain sites of cancer between 1938 and 1946 shows that this effort is being made and is making measurable progress.

It is apparent that the greatest increase in those that come for treatment as soon as they notice symptoms has been among persons with cancer of the respiratory tract, the skin, rectum, buccal cavity and stomach, in that order.

The greatest improvement in the adequacy of medical advice has been among patients with cancers of the breast, stomach, other digestive organs and genitourinary system. The reduction in delay due to negligence and ignorance has been most pronounced in persons with cancers of the rectum, genitourinary system, other digestive organs (table 8, item 5) and respiratory tract, in that order. An increase in 1946 is noted, however, in delay due to negligence on the part of patients with cancer of the skin.

Table 6.—*Percentage Distribution of Cancer by Age and Sex*

1935-1946

Age Groups	Total Male Patients	Male Patients Living as of 1947	Total Female Patients	Female Patients Living as of 1947
0-9	1.3	1.1	0.7	0.4
10-19	1.1	1.3	1.1	1.1
20-29	2.6	2.7	2.8	3.5
30-39	4.4	5.4	8.7	9.6
40-49	10.7	11.5	20.5	22.5
50-59	24.4	24.3	25.9	25.2
60-69	29.6	30.0	23.8	22.9
70-79	19.9	21.7	12.6	13.0
80+	4.7	....	2.7	....
Unknown	1.3	2.0	1.2	1.8
Total	100.0	100.0	100.0	100.0
Average age (yr.)	59.6	58.3	55.4	55.3

Table 7.—*Percentage Distribution by Sex and by Site of Certain Cancers Normally Considered Accessible*

1935-1946

	Percentage of Cancers	
Sites	In Male Patients	In Female Patients
Skin	12.0	7.3
Upper respiratory and alimentary tract	10.8	1.6
Eye, thyroid, etc.	1.4	1.8
Breast	0.4	25.3
Rectum	6.5	3.9
Anus	0.07	0.07
Corpus	....	7.7
Cervix	....	11.1
Ovaries	....	5.7
Other parts of female genital tract	....	0.67
Total	31.17	65.14

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[4] Macdonald, E. J.: Changing Reasons for Cancer Patient Delay, Connecticut Health Bull. **61**: 99 (April) 1947.

Table 9 lists the proportion of cancers in the registry in the digestive tract and in the viscera of the chest cavity, generally less favorable in end result because early diagnosis is so difficult and adequate treatment depends on early diagnosis.

Table 8.—*Reasons for Delay by Site of Cancer*

Site	No Delay		Inadequate Medical Advice		Negligence and Ignorance		Total No. of Cancers in Series	
	1938	1946	1938	1946	1938	1946	1938	1946
All sites	10.6	38.2	12.1	2.9	33.8	26.5	1,000	1,000
Breast	16.1	45.6	15.0	3.3	38.9	32.2	180	180
Stomach	7.4	30.5	9.5	3.2	24.2	21.1	95	95
Rectum	6.1	34.8	15.2	6.1	37.9	19.7	66	66
Other digestive organs	16.7	45.2	9.5	1.2	28.0	19.6	168	168
Respiratory system	1.7	46.7	20.7	5.2	22.4	13.8	58	58
Genitourinary system	11.1	36.2	12.6	2.5	36.7	23.6	199	199
Buccal cavity	6.5	26.1	8.7	2.2	43.5	43.5	46	46
Skin	2.1	20.2	5.5	2.1	39.4	51.2	94	94
All others	10.6	44.7	13.8	3.2	31.9	19.1	94	94

Table 9.—*Percentage Distribution of Cancer of Selected Sites*

1935-1946

Site	Percentage Distribution	
	Male	Female
Viscera of the chest cavity	9.1	1.9
Abdominal cavity viscera (excluding rectum and anus)	27.13	18.93
Total	36.23	20.83

There has been a decided increase in diagnosed cancer in both these groups since 1935. This has been more apparent since 1940. Among male patients, there has been an average of 18.7 cases of cancer of the thoracic cavity viscera for each of the seven years from 1940 through 1946. The actual incidence rate for 1945 was 26.4 per 100,000 males. The incidence rate for males for cancer of the abdominal cavity viscera, exclusive of the rectum and anus, averaged 51.0 per 100,000 for seven years and actually was 57.1 per 100,000 for 1945. Among females in the same group, the average incidence rate for seven years was 42.3 per 100,000 while the actual incidence rate for 1945 was 52.4 per 100,000.

The increase or decrease in the other sites of cancer is shown in table 10. The increase is pronounced in cancer of the skin among male patients. It is more gradual in cancer of the rectum and cancer of the male genital and urinary tracts. It is interesting to notice that the rates for cancer of the skeletal system, the upper respiratory tract, the anus and the central nervous system are stationary or beginning to decline. Among female patients, the same thing has happened in cancer of the soft parts, the central nervous system and the anus and metastatic cancer with no primary site discovered. This last observation is particularly encouraging and appears to be consistent year after year. The over-all incidence rates for cancer show an increase of 35.0 per 100,000 among males and 38.3 per 100,000 among females between the seven year average and the 1945 actual experience.

To know the size of the problem, to have an established follow-up system, to have available diagnostic and therapeutic resources, to have an alert medical profession and an aroused laity and to have a division of cancer control capable of tabulating and analyzing these factors are all prerequisites to the final evaluation, which is measured in lives saved, in improving the rate of survival. Table 11 shows the distribution of traced living patients, microscopically proved to have had cancer, alive at yearly intervals following treatment.

Improved preoperative and postoperative care, progressing medical skill in therapeutic technics, reduction in delay on the part of the patient and the physician and cooperation on an almost universal scale have implemented the formation of this record registry. In each year there is improvement in the percentage of survival. This may not be accounted for by the normal increase in the expectation of life of the over-all population, because the progressive increase in age at the time of treatment has been constant, thus absorbing this variable of over-all increased survival as has the five year average difference in age at the time of treatment for those that died within five years and those that survived. From 1935 through 1941, each of the years up to five years following treatment shows steady, and in some instances spectacular, improvement. In the years from 1941 through 1945, the improvement is so pronounced that the promise of an increased five or more year survival rate will be maintained.

Table 10.—*Incidence of Cancer by Selected Sites*

Rate per 100,000

Site	Incidence of Cancer			
	Male		Female	
	7 Year Average	1945	7 Year Average	1945
Skin	23.5	30.8	17.3	19.9
Soft parts	2.6	2.9	2.1	1.8
Skeletal system	2.1	2.0	1.8	2.9
Central nervous system	4.4	4.6	3.9	3.7
Upper respiratory and alimentary tracts	20.7	19.7	3.7	4.9
Miscellaneous structures of head and neck	2.8	3.4	4.2	6.2
Breast	0.7	1.4	62.6	67.6
Rectum	12.8	16.9	8.6	9.3
Anus	0.2	0.2	0.2	0.2
Urinary tracts	12.9	14.7	5.9	8.2
Male genital tract	22.6	25.1	...	...
Female genital tract	...	...	53.4	59.2
Systemic diseases	10.6	13.9	7.9	9.1
Metastatic cancer (no primary site discovered	8.8	10.1	9.9	8.9
Total	194.4	229.4	221.2	259.5

Table 11.—*Distribution of Traced Living Patients, Microscopically Proved to Have Had Cancer, Alive at Yearly Intervals Following Treatment*

By Cases and Percentages

Year of Admission	Total Treated	Alive Yr. of Treatment	Alive 1 Yr. Later	Alive 2 Yr. Later	Alive 3 Yr. Later	Alive 4 Yr. Later	Alive 5 Yr. Later
1935	1,399	912 65.2	593 42.4	472 33.7	397 28.4	345 24.7	309 22.1
1936	1,452	946 65.2	631 43.5	509 35.1	440 30.3	375 25.8	329 22.7
1937	1,622	1,098 67.7	729 44.9	552 31.0	453 27.9	406 25.0	361 22.3
1938	1,875	1,230 65.6	834 44.5	661 35.3	553 29.5	502 26.8	461 24.6
1939	2,096	1,424 67.9	967 46.1	780 37.2	683 32.6	608 29.0	565 27.0
1940	2,077	1,418 68.3	982 47.3	840 40.4	762 36.7	673 32.4	615 29.6
1941	2,465	1,745 70.8	1,280 52.0	1,089 44.2	966 39.2	879 35.7	825 33.5
1942	2,649	1,908 72.0	1,447 54.6	1,258 47.5	1,123 42.4	1,056 39.9	
1943	2,699	1,895 70.2	1,442 53.4	1,234 45.7	1,127 41.8		
1944	2,905	2,109 72.6	1,580 54.4	1,382 47.6			
1945	2,947	2,150 73.0	1,737 58.9				

Clinical Notes, Suggestions and New Instruments

ROCKY MOUNTAIN SPOTTED FEVER TREATED WITH AUREOMYCIN

CRISPIN COOKE, M.D.
Huntington, N. Y.

The occurrence of Rocky Mountain spotted fever due to infection with Rickettsia rickettsi in the eastern part of Long Island, N. Y., is not infrequent, because of the prevalence of the common vector Dermacentor variabilis, the dog tick. There are usually 10 to 15 cases each year in Suffolk County. The mortality of the disease is known to vary from year to year and in different parts of the country from 15 per cent to as high as 37.5 per cent in the Bitter Root Valley.

The following case is reported because of the striking and rapid result obtained with aureomycin, a new antibiotic which has been found to be extremely effective both in vitro and in vivo against rickettsial organisms of several varieties, as well as against certain viruses and bacteria. Aureomycin has been produced from a strain of Streptomyces aureofaciens isolated by Dr. B. M. Duggar of the Lederle Laboratories.

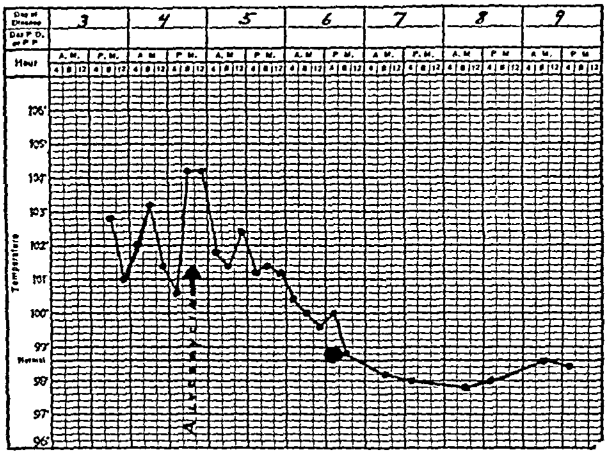
REPORT OF A CASE

A 28 year old white woman was admitted to the Huntington Hospital on July 19, 1948, with a three day history of severe headache, malaise and backache of rather sudden onset. There had been chills and temperature from 101 to 103 F., occasional nausea and vomiting and considerable photophobia. On the morning of admission she had noted a rash on her arms and legs. In the preceding two weeks she had found two or three embedded ticks on her body, the last about six days before onset of the illness. There had been no known exposure to possibly contaminated food or water, and there was no evidence of rat or louse infestation of her surroundings. The past history was entirely noncontributory.

Physical examination showed an acutely ill woman with a temperature of 103 F., pulse rate 120 and respirations 20. Diffusely distributed on the arms and legs there was a discrete pink macular rash, the lesions averaging 1 cm. in diameter. There were only a few on the trunk. The spleen was not palpable, and the results of the rest of the examination were entirely within normal limits. Initial laboratory work revealed a red blood cell count of 4,300,000, hemoglobin 12 Gm. and white blood cell count 8,500, with 75 neutrophils, 22 lymphocytes and 3 mononuclear cells. The urine was normal.

Rocky Mountain spotted fever was considered the most probable diagnosis, but, pending the result of blood culture to rule out meningococcemia, penicillin was given in doses of 300,000 units every six hours for three doses and then discontinued when the culture was reported to be negative. Through Dr. Yale Kneeland at Presbyterian Hospital, we were able to obtain a supply of aureomycin from Dr. Herald Cox of the Lederle Laboratories. Treatment with this was begun twenty-four hours after the patient's admission, on the fourth day of the illness, at which time the rash was more pronounced and violaceous and the temperature was spiking to 104 F. The dosage was 1 Gm. every six hours by mouth for forty-eight hours, at which time the temperature had returned to normal and the patient was dramatically relieved of all her symptoms. The aureomycin dosage was reduced to 0.5 Gm. every six hours for the ensuing twenty-four hours, making a total dose of 10 Gm. There were no symptoms or signs of toxicity, with the possible exception of mild nausea and vomiting for a few hours on the second day of treatment, which was transitory and probably due to other factors since it disappeared in spite of continued use of the drug. The patient continued to improve and was ambulatory, with the rash gone by the ninth day of the illness, and she was discharged from the hospital on the tenth day.

During her course two blood cultures were negative; urine and stool cultures revealed no pathogens. The blood cell count remained normal throughout. The Wassermann reaction of the blood was negative; nonprotein nitrogen was 39 mg. per hundred cubic centimeters, total protein 7.7, albumin 3.4 and globulin 4.3 mg. Serologic studies on the fourth day of the disease showed a negative Widal reaction, negative reaction to the complement fixation test for Rocky Mountain spotted fever and rickettsialpox, agglutination of Proteus OX19 to 1:40 and negative results with OX2 and OXK. On the tenth day, however, the reaction to the complement fixation test was positive for Rocky Mountain spotted fever in a titer of 88. This was confirmed by Dr. Cox at the Lederle Laboratories, who reported a positive result for Rocky Mountain spotted fever in serum dilution up to 1:64. The reaction to the rickettsialpox complement fixation test, which has been found to be somewhat more sensitive in detection of spotted fever early in the disease, also became positive by the tenth day, though in somewhat lower titer.



Temperature chart from the case reported.

COMMENT

It is felt that the prompt response to aureomycin therapy in this confirmed case of spotted fever, in which one would expect a severe febrile course of two to three weeks, is further evidence of the efficacy of this agent against the Rickettsia of Rocky Mountain spotted fever.

22 Oakwood Avenue.

From the North Shore Medical Group and Huntington Hospital.

A SAFE DIAGNOSTIC OPTICAL ESOPHAGOSCOPE

RUDOLF SCHINDLER, M.D.
Los Angeles

For a long time internists and surgeons have desired to possess an instrument with which the esophagus might be inspected safely and clearly. Esophagitis, a frequent cause of distress (Winkelstein), can be diagnosed only by direct inspection of the inflamed mucosa. Early carcinoma of the esophagus easily escapes roentgenologic detection.

DISADVANTAGES OF ESOPHAGOSCOPES NOW IN USE

The present esophagoscopes are not safe. Mastery of their use requires long study, but even in the hands of the most expert examiner occasional mishaps occur. The most frequent lesion is a hypopharyngeal tear, often leading to mediastinitis and death. Usually it is assumed that esophagoscopy has a morbidity rate of 2 per cent and a mortality rate of 0.5 per cent. These figures would rise considerably if esophagoscopy were to be done by any other than trained experts. The existing dangers attending esophagoscopic examination often prevent the most conscientious physicians from referring their patients for esophagoscopic study. Many esophagoscopists have also felt the need for diminishing the danger of esophagoscopic examination.

A tear of the hypopharynx is almost unknown following gastroscopy. Many thousands of gastroscopies have been done

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Fellow of the American College of Physicians.

From the Department of Medicine, College of Medical Evangelists, Los Angeles.

by me and most other gastroscopists without any such untoward result. Only rarely is it reported as a curiosity. This is not only true of the present day flexible gastroscope, but it was true also in the days of the rigid gastroscopes. Hübner,[1] in a study on the dangers of gastroscopy in the time of the rigid gastroscope, stated that practically all accidents involved the thoracic esophagus, but no hypopharyngeal lesions occurred.

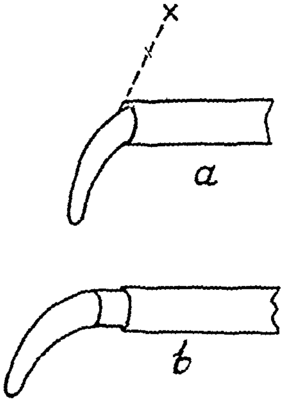

Fig. 1.—Comparison of obturator tips: *a*, faulty, and *b*, correct construction of tip of obturator, with *x* indicating the free dangerous edge.

This astonishing difference between esophagoscopy and gastroscopy is chiefly due to the different principle of introduction used in the two procedures. The introduction of the esophagoscope is done under guidance of the eye, the instrument being an open tube. The introduction of the gastroscope, the rigid as well as the flexible, was and is done under the guidance of the tactile sense, the instrument being equipped with an obturator. Esophagoscopists have contended that lesions could not occur if the esophageal lumen were constantly visualized. They warned[2] that one should never advance the instrument and especially that one should never pass the constrictor muscle of the pharynx if the lumen was not plainly visible. But in spite of these precautions, accidents have continued to happen.

The reason becomes obvious by a simple anatomic consideration. Nobody has ever suggested that one introduce a proctoscope as an open tube under visual guidance. If it were tried, lesions of the sphincteric portion of the rectum would occur, for it is closed by a strong sphincter muscle. It can be opened slightly if the patient is asked to press, but this opening usually is insufficient and may disappear at any moment. Disengagement of the walls of this canal by the use of an obturator is, however, simple.

The conditions at the entrance to the esophagus, though not identical, are similar. There, also, a powerful sphincter muscle is present. It is more frequently open than the anal sphincter muscle, yet it often is tightly closed. It may open after a swallowing movement, and therefore it has been recommended that the open esophagoscope be passed as the patient makes a swallowing movement. But this opening may be of very short duration only; it is easily missed, and it may be absent in apprehensive and spastic patients. Then a slight movement of the open instrument will produce the dreaded lesion.

An instrument bearing a soft rubber obturator may encounter three different situations: (1) The constrictor muscle of the pharynx may be open; then the instrument will enter the esophagus without resistance. (2) The muscle may be closed, but not spastically; then the rubber obturator will take over the function of the metal obturator of the proctoscope, it will gently and without danger disengage the walls and permit the metal tube to follow. (3) The muscle is spastically closed, in which circumstance no instrument can be introduced and its relaxation must be awaited. A rubber obturator, even under pressure, will bend but will not produce a tear. In the first and second instances an open tube is dangerous, a tube closed with a flexible obturator is safe, as ten thousands of examinations with the rigid gastroscope have proved.

It must be admitted that in times past mishaps occurred when esophagoscopes carrying an obturator were used. The reason for these mishaps is apparent. It was the size of these old tubes which was responsible for the accidents. At the entrance of the esophagus an anteroposterior diameter of about 15 mm. can rarely be exceeded. Instruments of times past had this maximum diameter. But in spastic and restless patients the very size of the instrument became dangerous. Esophagoscopists, therefore, reduced the size, and the present day standard Jackson esophagoscope has an outer diameter of only 10 to 13 mm. The rigid Schindler gastroscope of 1922 had a diameter of 11 mm., and no pharyngeal lesions were observed with this instrument.

These facts have been known to many observers. Henning[3] constructed a closed esophagoscope in 1932. Boros[4] in 1947 described an open esophagoscope the lower end of which is a flexible metal spiral. It is to be introduced blindly and probably often can be introduced easily, but if the visual introduction is abandoned the retention of an open tube appears illogical and unnecessary. In fact, each open esophagoscope can be changed into a safe instrument by inserting a tightly fitting rubber obturator.[5] A precaution must be used, however, in such a simple construction. If a rubber obturator bends, an empty space will form between the obturator and the free edge of the metal tube. This free edge then would be a source of danger again. This is avoided by attaching the rubber finger on a metal rod which is a few mm. longer than the esophagoscope (fig. 1).

Thus it is easy to solve the problem of a safe inspection of the esophagus, although such an instrument must not be used if lesions immediately below the constrictor muscle of the pharynx have been recognized at roentgen examination. There is the problem of the clear inspection left. As mentioned, for reasons of safety the diameter of the esophagoscope had to be much reduced. Consequently the picture seen at the end of the long tube is a small one. Its interpretation therefore can be difficult. Some mucus or blood may make the examination still more difficult. If there is a pathologic prominence, biopsy is usually required to determine its nature. This condition seems unsatisfactory to the internist who is used to the brilliant pictures of cystoscopy and gastroscopy.

A NEW ESOPHAGOSCOPE

The idea of constructing an esophagoscope having an optical system was conceived. It is not a new idea, however. It was, among others, tried by Glücksmann[6] and by Henning. Two solutions had to be considered, namely, to construct either an outer optical attachment or an optical system to be introduced into the esophagoscopic tube itself. The latter, more difficult way was chosen because of the more brilliant pictures and the better magnification available. The chief problem was to keep the esophageal mucosa away from the optical objective. This was solved by the construction of two metal shells covering the objective at introduction and being spread after introduction. Thereby the mucosa is removed to the proper distance. The objective itself had to be constructed different from that of a cystoscope or gastroscope. In the esophagus, side views could be of no avail. One has to look forward into a tube, and the prism used in cystoscopy and gastroscopy had to be abandoned in favor of a forward-looking objective lens. It seemed questionable whether it would be possible to keep such a lens clean, since one might think that it would be easily smeared by esophageal secretion. Preliminary attempts with a makeshift instrument in 1943 at Cook County Hospital, Chicago, proved that with the proper position of the patient

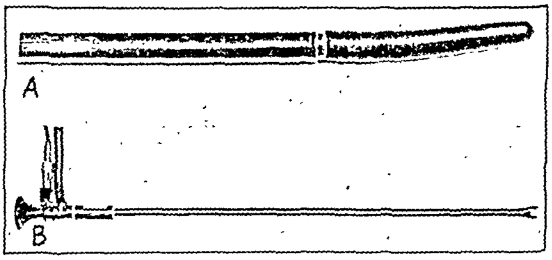

Fig. 2.—*A*, tip of instrument with obturator. *B*, instrument after removal of obturator and insertion of optical apparatus. Shells are spread to remove mucosa from objective.

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[1] Hübner, A.: Gastroskopie, Jena, Gustav Fischer, 1928.

[2] Jackson, C., and Jackson, C. L.: Bronchoscopy, Esophagoscopy and Gastroscopy, Philadelphia, W. B. Saunders Company, 1934.

[3] Henning, N.: Ueber ein neues Oesophagaskop für den Gebrauch der inneren Klinik, Klin. Wchnschr. **11**: 1673, 1932.

[4] Boros, E.: Flexible Tube Esophagoscopy, read before the American Gastroscopic Society, May 1948.

[5] Howard, J. T.: Adventures in the Esophagus, South. M. J. **40**: 197, 1947.

[6] Cited by Stark, H.: Lehrbuch der Ösophagoskopie, Würzburg, C. Kabitzsch, 1914.

and with the proper technic clear pictures could be obtained. Therefore such an instrument—a safe diagnostic optical esophagoscope—was constructed (American Cystoscope Makers, Inc., New York). It yields sharp pictures with high magnification, with which every detail can be readily recognized. This instrument is so thin (10 mm.) that the discomfort for the patient is minimal, if proper anesthesia is used (fig. 2).

Although the pictures seen are distinct and clear, it seemed desirable to add a biopsy forceps for the diagnosis in those cases in which an obstruction exists, but inspection does not permit the decision whether it is benign or malignant. This biopsy forceps is constructed also in junction with a magnifying optical system.

Similar optical attachments for air injection needle (treatment of varices) and a grasping forceps (extraction of foreign bodies) may be feasible and may change the diagnostic instrument into a therapeutic one.

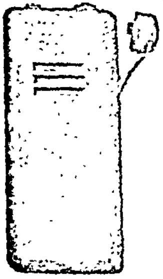
Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following reports. Howard A. Carter, *Secretary.*

OTARION HEARING AID MODEL E-2 ACCEPTABLE

Manufacturer: Otarion Hearing Aids, 159 North Dearborn Street, Chicago 1.

This instrument is a three tube air conduction hearing aid, with the batteries contained in the amplifier case. The case is constructed of die-cast magnesium alloy, coated with vinyl resin finish, ivory in color. A side-hinged full length back cover gives access to the battery compartments and the three tubes, which are readily accessible. The magnetic type receiver is connected to the amplifier case by means of a light plastic-covered cord which has dual pin plugs at each end.



Otarion Hearing Aid, Model E-2

Two wheel-type controls are placed at the top of the case. One is a volume control; the other is a combination "on-off" switch and tone control with three settings: 1 dot, full tone range; 2 dots, slight low frequency attenuation; 3 dots, greater low frequency attenuation. A detachable wearing or attachment clip fastens either to the front or the back of the case.

The Otarion Model E-2 contains a built-in voltmeter, called a Metrodyne, by means of which the voltages of either the A or the B battery can be checked whenever desired.

The dimensions are 133 by 64 by 33 mm. (5¼ by 2½ by ⅞ inches) and the weight is 170 Gm. (6 ounces). The A battery of the zinc and carbon type is 1.5 volts and the B battery of the zinc and carbon type is 30 volts. The A battery drain is 50 milliamperes and the B battery is 0.8 milliampere.

Acoustical Gain for Pure Tones (maximum gain in decibels for each of 6 frequencies and 3 settings of the tone control):

Position of Tone Control	Frequency					
	250	500	1,000	2,000	3,000	4,000 cycles
1 dot	51	55	62	63	65	50 db.
2 dots	46	53	61	63	65	50 db.
3 dots	40	48	58	63	65	50 db.

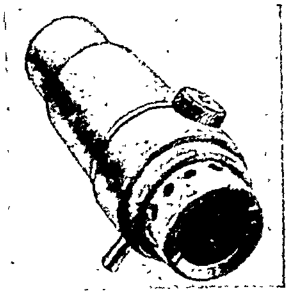
Acoustical Gain for Speech.—The maximum gain, when the tone control was set at the 1-dot position, was 55 decibels. This value was obtained on two different hard of hearing persons, each of whom is an experienced user of hearing aids and has approximately 60 decibels unaided loss for speech with a speech audiometer. These persons perceived speech with 55 decibels less intensity through a high quality sound amplification system (speech audiometer) in a sound-proof room with the hearing aid than without it. Note: This high gain for speech was obtained on experienced users of hearing aids with predominantly middle ear types of hearing impairments, which type of impairment obtains best results with hearing aids. This amount of gain with a hearing aid cannot be anticipated by persons with inner ear impairments.

The Council on Physical Medicine voted to include the Otarion Hearing Aid Model E-2 in its list of accepted devices.

POCKET SIZE ELECTRONIC STETHOSCOPE ACCEPTABLE

Manufacturer: American Medical Instrument & Supply Corp., 5 North Wabash Avenue, Chicago 2.

The Pocket Size Electronic Stethoscope is an instrument designed to amplify the sounds picked up during auscultation. It is roughly cylindric in shape and weighs about 225 Gm. (8 oz. avoirdupois). The length is 14 cm. (5½ inches), the diameter 5 cm. (2 inches) and the shipping weight 450 Gm. (1 pound). This does not include the necessary binaural fittings and rubber tubing. The needed electrical power must be supplied by a mercury type A battery and a 22½ volt zinc-carbon B battery.



Pocket size Electronic Stethoscope

The Council obtained evidence that the instrument had given satisfactory service in the hands of practicing physicians with normal hearing and that it gave increased accuracy of diagnosis in some cases. It was particularly helpful to physicians with impaired hearing.

The Council on Physical Medicine voted to include the Pocket Size Electronic Stethoscope in its list of accepted devices.

Council on Pharmacy and Chemistry

REPORT TO THE COUNCIL

The Council has authorized publication of the following progress report from the Therapeutic Trials Committee.
Austin Smith, M.D., *Secretary.*

ACTIVITIES OF THE THERAPEUTIC TRIALS COMMITTEE

The Therapeutic Trials Committee was organized as a standing committee of the Council on Pharmacy and Chemistry and commenced its operations in April, 1946. Although considerable attention has been devoted to matters of organization and procedure during the intervening two and one-half years, a number of significant problems have been commenced under Committee auspices, and it is deemed appropriate to summarize briefly the accomplishments of the Committee and the investigators working under its aegis.

The work of the Committee can conveniently be divided into three sections: (1) investigations pursued under Committee contracts, (2) collaborative projects, and (3) educational and informational services. It must be emphasized that no problem undertaken by the Committee has as yet been completed and, therefore, detailed reports on Committee investigations cannot be presented. Comments on the general trend of these investigations are offered, but it should be understood that no conclusions are permissible until the research has been completed.

Investigations Pursued Under Committee Contracts

Because of the terms of the contracts, it is not possible to identify the investigators or the sponsoring firms involved in the investigations mentioned below. On completion of these investigations it is anticipated that full reports will be published by the authors for the benefit of the medical profession.

Streptomycin Therapy of Granuloma Inguinale.—Although several reports of the efficacy of streptomycin in the treatment of granuloma inguinale have appeared, it was felt desirable to encourage additional studies in order to determine, on a large number of patients, the precise usefulness of this agent. The results so far reported to the Committee confirm the efficacy of streptomycin, but since the effective dose appears to be large, investigations are proceeding to determine whether combined streptomycin-antimony therapy may be more efficacious and less likely to induce undesirable side-actions.

Aludrine Sulfate (Isopropyl Epinephrine) Therapy of Bronchial Asthma.—Aludrine-Sulfate, a preparation first tried clinically in Germany during the last war, has been found to have a profound bronchodilator action in laboratory animals and, unlike epinephrine and ephedrine, to have a vasodilator action. It was thought desirable to investigate more thoroughly its effects in bronchial asthma.

Preliminary work indicates that it is not as potent in clinical asthma as is indicated by animal studies. Furthermore, when given by intramuscular injection or by mouth in doses sufficient to exert a significant bronchodilator effect, patients may experience typical anginal attacks and show electrocardiographic changes compatible with coronary constriction. There is some indication that these serious side-effects can be mitigated by administering the drug sublingually and by inhalation. A report has been submitted by the responsible investigators and will be published shortly.

Chlorophyll Therapy of Wounds and Ulcers.—Numerous reports have been published regarding the efficacy of solutions and ointments containing chlorophyll in decreasing the healing time of wounds and ulcers, particularly those which showed delayed healing or were indolent. In an attempt to secure a more critical evaluation of chlorophyll therapy, two investigations are being conducted under Committee auspices. The first, dealing with the actions of a solution and an ointment of chlorophyll on the rate of healing of wounds involves the use of a method originally devised by Smelo[1] and quantitative measurements of the rate are being made by a technic based on observations of Carrel and Hartman[2] and adapted by DuNouy.[3] In the small series of patients studied to date, 25 per cent have shown acceleration of wound healing. Where significant variables were eliminated, 37 per cent of the patients showed accelerated healing.

A second investigation involving the study of a chlorophyll solution in the treatment of certain chronic nasopharyngeal conditions is underway but no reports of progress have as yet been submitted to the Committee.

Methyl Cellulose as a Laxative.—Work is just commencing on a clinical study designed primarily to study various factors involved in chronic forms of constipation and to evaluate the possible usefulness of methyl cellulose as compared to other bulk-producing laxatives and lubricants.

Adjusted Ophthalmic Solutions.—Because of the unsatisfactory state of our knowledge concerning the optimum physical-chemical properties for solutions of drugs intended for ophthalmic use, a request was made to the Committee for an investigation of such factors as p_H, isotonicity, stability of the drug, etc., on the effect of these solutions on the human eye. Arrangements have been made for this investigation, and the work will get under way in the near future. The results of this study should be of importance not only to ophthalmologists but also to pharmacists and pharmaceutical manufacturers.

Collaborative Investigators

Two problems have been presented to the Committee which, because of their magnitude, have required the appointment of special subcommittees to plan and evaluate the investigations. Furthermore, the active collaboration of competent investigators has been necessary in order that all phases of these problems receive adequate exploration.

Estrogens and Androgens in Mammary Cancer.—A report outlining the background of this study has been published.[4] Forty-eight clinics are participating in this study. Each investigator is pursuing a problem of his own choosing, often in a larger field of research. In order to make his data available for pooling with those of others, he conforms to certain minimal requirements established by the Subcommittee on Steroids and Cancer, which permit him to choose one of several dosage schedules but require comparisons to be made with certain standard schedules. Certain minimal laboratory examinations are required on each patient, but the investigator is encouraged to use his own ingenuity and widen the problem in the direction wherein lie his own particular interests.

Four dosage schedules of testosterone propionate are being investigated in order to determine the minimum dose to produce definite effects on the primary tumor or its metastases. These are: 75 mg. weekly, 150 mg. weekly, 300 mg. weekly, and 600 mg. weekly. Testosterone therapy is being directed primarily against bony metastases although observation of the effects of this hormone on soft tissue lesions, especially in younger women, is being made.

Six different estrogens are also under study for their effects on soft tissue and bony lesions, particularly in older women. The estrogens and dosage being used are as follows: diethylstilbestrol, 15 mg. daily; dienestrol, 15 mg. daily; dimethyl ether of diethylstilbestrol, 30 mg. daily; ethinyl estradiol, 3 mg. daily; "premarin," 30 mg. daily; and estradiol dipropionate, 5 mg. three times in the first week and 5 mg. twice weekly thereafter.

A uniform system of reporting cases has been established and all case reports and progress reports will be reviewed and evaluated by the Subcommittee on Steroids and Cancer, composed of Dr. Ira T. Nathanson, Boston, Chairman, Dr. Frank Adair, New York, Dr. Willard Allen, St. Louis, and Dr. Earl Engle, New York. Through the courtesy of Col. J. E. Ash, the facilities of the American Registry of Pathology have been made available to the Committee and all pathologic material obtained at biopsy, operation, or autopsy of patients admitted to this study will be deposited at the Army Institute of Pathology as a permanent collection. This material will be reviewed and evaluated by three consultants in pathology: Dr. Howard T. Karsner, Cleveland, Dr. Fred Stewart, New York, and Dr. Shields Warren, Boston.

Similarly, duplicates of significant roentgenologic films will be prepared and deposited at the Registry of Roentgenologic Pathology, where they will be reviewed by three consultants in radiology: Dr. L. H. Garland, San Francisco, Dr. Leo Rigler, Minneapolis, and Dr. Merrill Sosman, Boston.

The active cooperation of the American Cancer Society through the Committee on Growth of the National Research Council and of The National Advisory Cancer Council of the United States Public Health Service has been secured. These agencies have reviewed applications for grants in aid from participating investigators and have in most instances granted the sums requested for carrying on this work. None of the funds so granted have been given to the Committee nor has the Committee sought financial assistance from outside sources to defray the expenses incident to the coordination of this project.

Fourteen pharmaceutical firms have agreed to supply large quantities of testosterone and estrogens to the Committee for use in this study. These firms have been most generous with these costly materials and their wholehearted cooperation is appreciated by the Committee. The cooperating firms are:

Abbott Laboratories.
Ayerst, McKenna & Harrison, Limited.
Ciba Pharmaceutical Products, Inc.
Charles E. Frosst & Co. (Canada),
Lakeside Laboratories, Inc.
Rare Chemicals, Inc.
Roche-Organon, Inc.
Schering Corporation
Schering Corporation Limited (Canada)
E. R. Squibb & Sons.
The Upjohn Company.
Wallace & Tiernan Products, Inc.
White Laboratories, Inc.
Winthrop-Stearns, Inc.

Although the actual investigations did not commence until March, 1948, more than 235 cases of breast cancer were under study by 26 investigators by the middle of October, as shown by case reports filed with the Committee. It is much too early to draw any conclusions regarding the palliative effects of these hormones in breast cancer. It can be said, however, that perhaps 20 to 25 per cent of the patients show some definite beneficial subjective or objective improvement. To be answered are such questions as the duration of palliation, particularly in comparison to the results known to occur following adequate roentgen irradiation; the physiologic or pathologic factors governing favorable responses; the mechanism by which regres-

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1. Smelo, L. S.: Arch. Surg. **33**: 493, 1936.
2. Carrel, A., and Hartman, A.: J. Exper. Med. **24**: 429, 1916.
3. Du Noüy, P. L.: J. Exper. Med. **24**: 461, 1916.
4. Report of the Council on Pharmacy and Chemistry, J. A. M. A. **135**: *987, 1947.*

sive changes in the tumors are brought about, and the most satisfactory preparations and doses to be used.

From time to time reports on this project will be published by the Committee and by the individual collaborators. The material from which these reports are prepared will be available to physicians and other scientists at the American Registry of Pathology in Washington, D. C.

Evaluation of Moist Heat in Poliomyelitis..—At the request of the National Foundation for Infantile Paralysis, the Committee agreed to investigate the feasibility of designing and conducting a coordinated clinical investigation to determine the precise value, immediate and remote, of moist heat in the treatment of acute poliomyelitis. A Subcommittee composed of Dr. William T. Green, Boston, Dr. Derek Denny-Brown, Boston, Dr. Hugo Muench, Boston, and Dr. James L. Wilson, Ann Arbor, was appointed. The Subcommittee drafted a preliminary report indicating that such a study would be feasible and outlined in general terms the experimental design for such a project. This report was submitted to The National Foundation, which subsequently requested the Committee to draft detailed plans and a budget for such an investigation for consideration by their Medical Advisory Committees.

The difficulties inherent in studying the effects of any therapeutic procedure in poliomyelitis are caused by the variability and unpredictability of the disease and by the emotional aura which surrounds the scientist seeking objective data in any condition which affects children or which produces crippling. These difficulties can be overcome only by the establishment of rigid controls in the clinical investigation and securing the cooperation of competent and critical investigators who will sacrifice their freedom of individual action in order to follow predetermined protocols established by the Committee.

Fortunately, several such investigators have been found who have indicated a willingness to participate in such a project if The National Foundation for Infantile Paralysis decides to proceed with the investigation outlined by the Committee.

Although all details of the investigative program have not been worked out, it is apparent that it will cost a great deal of money to do a properly critical investigation. One of the questions which The National Foundation will have to decide is whether the expected results of such a program will justify the expenditure of large sums of money.

Educational and Informational Projects

Besides the sponsorship of clinical investigations, the Committee is undertaking to collect information and publish reports of a general nature which may be of interest to the medical profession and to research workers. One such article, "The Cost of Clinical Research" has already been published.[5]

A group of Consultants in Statistical Methods has been formed, comprising Dr. J. Harold Austin, Philadelphia, Dr. Errett C. Albritton, Washington, Dr. George F. Badger, Cleveland, Dr. Ross L. Gauld, Washington, Dr. H. M. C. Luykx, New York, and Dr. Everett L. Welker, Chicago, who are considering the preparation of a series of articles on the design of experiments and the evaluation of data for the benefit of the medical profession.

More than forty institutions engaged in medical research have been visited by the Secretary of the Committee and the facilities and research interests of the investigators of these forty institutions have been tabulated and indexed.

Liaison has been maintained with the Food and Drug Administration, Research Grants Division of The National Institute of Health, and The National Research Council. An effective interchange of information of mutual interest has been established.

From time to time additional activities will be developed to make the Committee more useful to the medical scientist and to the profession in general. It is believed, however, that the activities of the Committee since its establishment two and a half years ago demonstrate the wisdom of the Council on Pharmacy and Chemistry in thus extending the scope of its interests.

Chester S. Keefer, M.D., Chairman.
Walton Van Winkle Jr., M.D., Secretary.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

ROCKY MOUNTAIN SPOTTED FEVER VACCINE.—Vaccine prepared from membranes of embryonated chicken eggs infected with Rickettsia rickettsii. Rocky Mountain Spotted Fever Vaccine is prepared from a saline suspension of infected chick embryo membranes. The suspension, after inactivation with formaldehyde solution, is extracted with ether, according to a modification of the method of Craigie (*Canad. J. Res. E.*, **23**:104, 1945), to remove yolk lipids and tissue debris, yielding an almost water-clear solution which contains the immunizing antigen.

Actions and Uses.—There is considerable amount of evidence that a vaccine preparation is of value in the prevention of Rocky Mountain spotted fever (tick typhus), a rickettsial disease due to Rickettsia rickettsii which is widely ditsributed in the United States, being especially prevalent in Maryland, Virginia and North Carolina as well as in some parts of the Rocky Mountain regions. In the western United States the common vector is D. andersoni which is rarely found in urban centers; while in the eastern United States both urban and rural areas may be infested with the common vector, the dog tick, D. variabilis. The vaccine originally was made from artificially cultivated and infected ticks. More recently, this has been replaced by the infected membranes of the embryonated chicken eggs.

The vaccine leads to the development of active immunity, the duration of which is not known. The question as to whether the vaccine should be employed depends to a large extent upon the likelihood of exposure to infection. When exposure is likely it is advisable to repeat the vaccination annually. In areas in which the risk is large, the vaccine would be recommended especially for ranchers, campers and others, while in areas in which the disease is rare, vaccination hardly can be justified. The vaccine contains egg protein, hence should not be given to persons sensitive to egg protein.

Dosage.—0.5 cc. to 2.0 cc., depending on the age of the subject, to be repeated once or twice at intervals of from 5 to 10 days.

E. R. Squibb & Sons, New York

Rocky Mountain Spotted Fever Vaccine: 4 cc. vials. Preserved with sodium ethylmercurithiosalicylate 1:10,000.

PENICILLIN (See New and Nonofficial Remedies 1947, p. 144).

The following dosage forms have been accepted:

Eli Lilly & Company, Indianapolis

Crystalline Penicillin G Potassium: 100,000, 200,000, 500,000 and 1,000,000 units, 20 cc. vials.

Ointment Crystalline Penicillin G Potassium: 1,000 units per gram, 28 Gm. tubes.

Ophthalmic Ointment Crystalline Penicillin G Potassium: 1,000 units per gram, 3.5 Gm. tubes.

Troches Crystalline Penicillin G Potassium: 5,000 units.

Commercial Solvents Corp., New York

Crystalline Procaine Penicillin G in Oil: 300,000 units per cc., in peanut oil, 10 cc. vials.

MERTHIOLATE (See New and Nonofficial Remedies 1947, p. 96).

The following dosage form has been accepted:

Eli Lilly & Company, Indianapolis

Ointment Merthiolate: 1:1,000, 28 Gm., 450 Gm. (1 lb.) and 2.26 Kg. (5 lbs.) jars. Merthiolate 0.1 per cent in a hydrophilic ointment base.

AMINOPHYLLINE-U. S. P. (See New and Nonofficial Remedies 1947, p. 305).

The following dosage form has been accepted:

Estro Chemical Co., Inc., New York

Solution Aminophylline: 0.25 Gm., 10 cc. ampuls; 0.5 Gm., 2 cc. and 20 cc. ampuls.

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[5] Report of the Council on Pharmacy and Chemistry, J. A. M. A. **133**: 30, 1947.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, NOVEMBER 20, 1948

LYMPHOCYTES AND GLOBULIN

At a recent conference on lymph held by the New York Academy of Sciences, White and Dougherty[1] presented important statements on the newer knowledge of lymphocytes. The Yale investigators said that the structure and function of lymphoid tissue are controlled by pituitary-adrenal cortical secretion and that changes can be observed in this tissue following stimulation of the pituitary or the administration of adrenal cortical preparations. The changes are: a dissolution of lymphocytes in lymphoid structures, a profound lymphopenia, an increase in serum beta globulins and gamma globulin and, in the immunized animal, a release of antibody globulin to the circulation.

The dissolution of lymphocytes is characterized by a shedding or budding of the lymphocyte cytoplasm. As a consequence, this material is released to the lymph and, thus, to the systemic circulation. Lymphocytes, in the normal animal, contain a protein identical with the normal serum gamma globulin; a second component of lymphocytes is probably identical with the beta globulin of serum. Therefore, the accentuated cytoplasmic budding of lymphocytes, resulting from augmented adrenal cortical hormone concentration, causes an increased amount of lymphocyte globulins in the blood.

The increased dissolution rate of lymphocytes within lymphoid structures results in a failure of delivery of these cells to the circulation. The adrenal cortical steroids controlling lymphocyte dissolution are those which are oxygenated in position 11 of the steroid nucleus. Thus the peripheral lymphopenia following acute adrenal cortical stimulation is a readily determined manifestation of adrenal cortical activity. The presence of acute lymphopenia may be accepted as evidence that the sequence of events described is taking place.

Lymphocytes are the most widely distributed cells in the body. The release of the protein of lymphocytes following augmented pituitary–adrenal cortical secretion suggests that lymphocytes are a storehouse of readily available protein. This protein may be a significant portion of the reserve or deposit protein and the source of a large proportion of the extrahepatic nitrogen which appears in the urine in conditions of stress. Involution of lymphoid tissue and the loss of nitrogen from lymphoid tissue as a result of fasting occur only in the presence of intact adrenals. In the adrenalectomized animal, the reserve protein present in lymphocytes cannot be released during a period of fast. The availability of this protein in other circumstances of stress also probably depends on the presence of the pituitary and the adrenals.

An intimate relationship has been demonstrated between plasma globulins and lymphocyte proteins. The cytoplasmic proteins of lymphocytes and the hormonal control of their release attain added significance in the light of the various stimuli, including hemorrhage, chronic inanition, injection of heterologous protein or protein derivatives and irritation of the peritoneum, which activate the pituitary–adrenal cortical mechanism.

The demonstration of the high nutritive value of gamma globulin, a normal constituent of lymphocytes, adds importance to the role of these cells in protein metabolism. Indeed, the lymphocyte may bear a relationship to protein metabolism similar to that of the fat cell to lipid metabolism.

A portion of the protein of lymphocytes in the immunized animal is labeled globulin or antibody, and the rate of release of this protein is regulated by the same factors that control release of protein from lymphocytes in the nonimmunized animal. The demonstration of the basis of the anamnestic response is proof that lymphocytes are a storehouse of protein. Animals without circulating antibody have been shown to have antibody within their lymphocytes, and this labeled globulin is released to the circulation, as a result of increased supply of pituitary–adrenal cortical hormones. Increased secretion of the animal's own adrenotropic hormone may occur in response to a wide variety of stimuli which are known to activate pituitary–adrenal cortical secretion. Hemorrhage, cold, heat, bacterial toxins, foreign proteins and toxic chemical agents all activate the hormonal mechanism and have been used to demonstrate the anamnestic response. Several investigators have suggested that reticuloendothelial cells are concerned with the production of immune globulin.

As lymphocytes have been demonstrated to contain antibody, it is evident that, as these cells reproduce themselves, the labeled globulin constituent of the cytoplasm is transferred to the daughter cells. Tumors which developed from transplants of antibody-containing malignant lymphocytes were shown to contain as much immune globulin as the tumor from which the tissue was taken for transplantation. Therefore, factors which increase the number of lymphocytes will also augment production of antibody by increasing the available potential store of immune globulin.

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[1] White, A., and Dougherty, T. F.: Role of Lymphocytes in Normal and Immune Globulin Production, and the Mode of Release of Globulin from Lymphocytes, Ann. New York Acad. Sc. **46:** 859 (Sept.) 1946.

The presence of antibody in lymphocytes gives added significance to the wide distribution of these cells in the body. At least one major function of the lymphocytes which are infiltrating into all of the tissues of the body is, no doubt, to serve as a medium of distribution of gamma globulin. The recent demonstration of the high nutritive value of gamma globulin suggests that lymphocytes supply to cells throughout the body a protein which may fulfil nutritive and, perhaps, other physiologic needs of the body cells.

Some investigators have not been able to confirm the theory mentioned, particularly the part which relates to the dissolution of lymphocytes with the release of globulin antibodies. The differences in results attained by the various critics of this theory perhaps will stimulate further research on lymphocytes as well as antibodies, about which important subjects far too little is known.

DIABETES DUE TO ALLOXAN

Diabetes mellitus was first produced experimentally in dogs by von Mering and Minkowski in 1889 by means of total extirpation of the pancreas. G. F. Young in 1937 produced diabetes in dogs by daily injection of extracts of anterior pituitary for a period of several weeks. Dunn, Sheehan and McLetchie,[1] while attempting to elucidate the pathogenesis of the crush syndrome, administered alloxan to various animals in an effort to establish tubular nephritis. Many animals died during the first day. Investigation of these deaths revealed acute necrosis of the islet tissue of the pancreas. The development of this lesion was accompanied by an initial rise of the blood sugar, followed by intense hypoglycemia; they believed that the lesion was caused by overstimulation of the islets with overproduction of the insulin and later death of the cells by overstrain. Jacobs[2] first described the initial hyperglycemic and hypoglycemic phases following intravenous administration of alloxan in rabbits, and observed the symptomatic relief of the hypoglycemia by the administration of glucose. Later the phase of hyperglycemia was added to the picture.

The production of diabetes without nephritis is dependent on the difference between the nephrotoxic and diabetogenic doses. Early death following injection of alloxan could be prevented by prophylactic administration of glucose. When animals were thus sustained during the period of hypoglycemia, they survived and became permanently diabetic. Dunn and McLetchie, Baily and Baily, Goldner and Gomori and Houssay and his co-workers produced sustained diabetes due to alloxan in rats, rabbits, dogs, monkeys and cats. Diabetes due to alloxan, according to Lukens,[3] is a partial pancreatectomy produced by a chemical agent the effect of which is to cause selective degeneration of the beta cells. The subsequent diabetes may vary from the mildest to the most severe type. Diabetic animals respond readily to insulin. The diabetes may be controlled by the regular use of insulin. Large doses of alloxan produce severe diabetes and renal insufficiency terminating in acidosis and coma.

The most striking complication of diabetes due to alloxan in rats and rabbits has been the development of cataract. The incidence of cataract is greater and the appearance time shorter when diabetes is severe. In addition to cataract one group of investigators has reported the occurrence of retinal lesions consisting of capillary hemorrhages. Chestler and Tislowitz observed that immature rats with diabetes due to alloxan were strikingly dwarfed, some remained sexually infantile, and the intestinal tract was enlarged in proportion to body weight.

Pathologic studies of diabetes due to alloxan emphasize that injury from alloxan takes place within a few minutes of its injection and that the subsequent alterations are the consequence of this initial injury. The changes which begin immediately after the injection of alloxan progress to the complete disintegration of the beta cells within six hours, that is, at the onset of the hypoglycemic phase. The final picture after diabetes has existed for a few weeks is that of striking atrophy of the islands. The acinar tissue is usually normal. The toxicity of alloxan for the beta cells of the islands of Langerhans is accompanied by damage of the renal tubules. The thyroid, parathyroid and pituitary glands are usually described as normal. The liver has been reported by most observers as normal. Adrenal glands increase in weight in alloxan as in pancreatic diabetes.

Alloxan was first given to man by Brunschwig[4] and his co-workers to relieve hyperinsulinism due to islet cell carcinoma. They also gave it to 4 patients with severe malignant disease of other types. The 4 persons with normal blood sugar had a negligible hyperglycemic phase and no evidence of diabetes. Increasing amounts were given over periods up to six days. This experience suggested that man is resistant to alloxan. Conn[5] reported a case of a man with a pancreatic islet cell tumor and hyperinsulinism. The patient was given a nine day course of alloxan injections. At operation the tumor was found and removed. The islets of the pancreas proper were found to be severely damaged. Immediately on removal of the tumor typical diabetes mellitus developed. This experience suggests that the pancreatic islet tissue of human beings is sensitive to alloxan. Conn's experience contradicts the repeatedly expressed opinion that human islet tissue is exceedingly resistant to the degenerative effects of alloxan.

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[1] Dunn, J. S.; Sheehan, H. L., and McLetchie, N. G. B.: Necrosis of Islets of Langerhans Produced Experimentally, Lancet **1**: 484-487 (April 17) 1943. Dunn, J. S., and McLetchie, N. G. B.: Experimental Alloxan Diabetes in the Rat, ibid. **2**: 384-387 (Sept. 25) 1943.

[2] Jacobs, H. R.: Hypoglycemic Action of Alloxan, Proc. Soc. Exper. Biol. & Med. **37**: 407-409 (Nov.) 1937.

[3] Lukens, F. D. W.: Alloxan Diabetes, Physiol. Rev. **28**: 304-330 (July) 1948.

[4] Brunschwig, A.; Allen, J. G.; Owens, F. M., Jr., and Thornton, T. F.: Alloxan in the Treatment of Insulin Producing Islet Cell Carcinoma of Pancreas, J. A. M. A. **124**: 212-216 (Jan. 22) 1944.

[5] Conn, J. W., in discussion on Bailey, C. C.; Bailey, O. T., and Leech, R.: Alloxan Diabetes, Proc. Am. Diabetes A. (1946) **6**: 375-393, 1947.

Present evidence indicates that the action of alloxan on the islands of Langerhans is exerted directly. The pathologic changes are believed to be the consequences of an immediate toxic injury of the beta cells. The initial hyperglycemic phase has been prevented by insulin, phlorizin, adrenalectomy, hypophysectomy and hepatectomy. The most generally accepted hypothesis, according to Lukens, is that preformed insulin is liberated from the damaged islets. Diabetes due to alloxan is a valuable aid in the study of diabetes. Evidence does not indicate that alloxan is related to human diabetes mellitus.

UNDERSTANDING PEOPLE

Science during the next century, said Roger J. Williams, addressing the Centennial Meeting of the American Association for the Advancement of Science, will predominantly be occupied with human science. Physical sciences and their applications will continue to thrive, but the most significant development of the next century, he believes, will be in the realm of human science or of understanding people. Social problems can be solved only if we understand what people are like. Human beings, Williams believes, should be studied anatomically, physiologically, psychologically and in their social relations. Differentiation or individuality is a potent factor in every social problem. One of the crucial tests in understanding people is to know how they are alike and how they differ from one another. Probably inequalities are the very basis of our democracy. If we were all the same and had the same likes and dislikes, there would be no need for freedom. We would all fall readily into the same pattern of life, and difficulties would never arise. Because we do have individuality we want freedom to make our own decisions and live our own lives.

People differ one from another because of their inheritance and because of the differences in environmental influences. The relative importance of the two factors is a matter of conjecture and opinion. Inherent individuality is most highly developed in man. Superimposed on these inherent differences are differences induced by environmental and cultural influences.

People differ in the size and shape of their bodies and their heads, noses, hands, feet and legs. Individuality in shape, size and cellular composition are just as pronounced with respect to our thyroids, our adrenals, our sex glands and our pituitary glands. It is, therefore, not surprising that we do not always see eye to eye and that our other senses do not work uniformly for all of us. Williams cites an experiment in which a chemical was tested in a special study of 6,377 persons. Of those who tested it 21.3 per cent found it tasteless, 64.5 per cent found it bitter, many extremely so, 5.4 per cent found it sour, 2.1 per cent found it sweet, 4.8 per cent found it salty and the remaining 1.9 per cent ascribed to it miscellaneous other tastes.

The work of Beadle and his associates demonstrated that people inherit through the agency of genes their entire metabolic machinery, and, since each inheritance is distinctive, it follows that everyone has metabolic machinery that is distinctive. The most apparent outward manifestation of the existence of distinctive metabolic patterns is the existence of allergies and differences in the responses to drugs.

Williams also stresses that intelligence is not a unitary trait possessed in high degree by some and in low degree by others. There are many different ways in which one can be intelligent. The most compelling evidence of this fact is the existence of the so-called idiot-savants. Williams feels that the greatest benefits to be derived from a revised school system will come from recognition and care for individuality. The schools of the future will devote considerable effort in the earliest grades to helping the students to become acquainted with themselves.

Current Comment

ATOMIC ENERGY COMMISSION FELLOWSHIPS

The Atomic Energy Commission has established a fellowship program for physicians who desire to be trained and carry on research in the field of atomic energy as it relates to medicine. The Commission requested the National Research Council to undertake the administrative responsibilities of the fellowship program. A committee has been established in the Council which considers applications from physicians under 35 years of age who have had one year internship or equivalent training. The fellowships, which are for one year, may be renewed. The candidate is expected to enroll in nuclear radiation physics, pertinent mathematics and certain courses in chemistry. He may make arrangements for this instruction and, if that is not feasible, may attend one of the regional training centers which have been established by the Atomic Energy Commission. This basic training will comprise lectures, laboratory exercises and demonstrations for about six months, after which fellows will have an opportunity to participate in research projects which the Atomic Energy Commission is supporting at various institutions throughout the United States. Fellows will be able to maintain contact with clinical medicine through the affiliated medical schools and hospitals. The Commission has released the names of forty-four fellowships recently awarded under this program. Five classes of research fellowships have been established, including not only medical science but physical, biologic and agricultural sciences as well. The postdoctoral fellowships carry a basic stipend of $3,000 a year, the predoctoral a basic stipend of $1,600 a year, and these may be increased to provide for support of dependents or other special needs of the fellows. The Atomic Energy Commission considers this program an integral part of its activities. There is a shortage of scientific personnel in medical and allied fields as they relate to atomic energy.

ORGANIZATION SECTION

Official Notes

SCIENTIFIC EXHIBIT—ATLANTIC CITY SESSION

The Scientific Exhibit will mark its Fiftieth Anniversary at the Atlantic City Session, June 6-10, 1949. This feature of the meeting was started in 1899 as a pathology exhibit, and in 1903 was expanded to include all branches of medicine. Awards for the best exhibits have been made since 1908.

At the coming meeting in Atlantic City, each of the eighteen Sections of the Scientific Assembly will sponsor a group of exhibits. Final selection of exhibits and assignment of space will be made after all applications have been received by the Committee on Scientific Exhibit of the Board of Trustees, consisting of Dr. Dwight H. Murray, Napa, Calif.; Dr. E. J. McCormick, Toledo, Ohio, and Dr Gunnar Gundersen, LaCrosse, Wis.

Application blanks for space in the Scientific Exhibit at Atlantic City are now available and may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10, Ill.

COUNCIL ON NATIONAL EMERGENCY MEDICAL SERVICE

The American Medical Association's Council on National Emergency Medical Service held its third regular meeting in Chicago, November 1. This agency of the Board of Trustees, established in 1947, is dedicated to a continuous study of the medical, health and sanitary needs of the nation's armed forces, industry, agriculture and the civilian population at large in time of national stress, disaster and emergency.

In attendance were Dr. Roscoe L. Sensenich, President of the Association; Dr. Elmer L. Henderson, Chairman of the Board of Trustees; Dr. Morris Fishbein, Editor of The Journal of the American Medical Association; Dr. James E. Paullin and Dr. Edward L. Bortz, both former Presidents of the Association, and Dr. James C. Sargent, Chairman of the Council. In addition to the Council members and consultants, approximately twenty-five other physicians, including Council secretaries and Bureau directors of the Association, were present. Dr. Carl Peterson, Secretary of the Council on Industrial Health, reported that in the event of another war the success of an industrial health program now universally recognized as a vital factor in defense would largely depend on the complete coordination of military and civil work. Appropriate steps, he disclosed, have already been undertaken to assure a comprehensive plan to meet the emergency. Dr. James R. Wilson, Secretary of the Council on Foods and Nutrition, reported briefly on the subject of nutritional aspects of national security. Dr. Donald G. Anderson, Secretary of the Council on Medical Education and Hospitals, analyzed the medical graduate training program now in operation by the Armed Forces. Mr. Edwin Holman, representing Mr. J. W. Holloway Jr., Director of the Association's Bureau of Legal Medicine and Legislation, reported on legal aspects of legislation in connection with the Selective Service Act.

The Council, mindful of its responsibilities to the profession and the public at large and giving heed to the threat of atomic warfare, took cognizance of the fact that certain of its basic recommendations require reiteration by the Association. With the view in mind of placing increased emphasis on the medical phase of planning for national defense, it was recommended that the Board of Trustees reintroduce the following resolutions to the House of Delegates:

Be it Resolved, "That the President of the United States of America and the Congress be respectfully urged:

"That in peace as in time of war the Surgeon General of the Army, the Surgeon General of the Department of the Navy and the Air Surgeon, Department of the Air Force, have the authority and responsibility for participation, with commensurate rank and at the level of the Chiefs of Staff and the Chiefs of Naval Operations of the Armed Forces, in all military and naval planning, organization and operations as these relate to medical, health, sanitary and welfare services and for the assignment and utilization of medical and allied personnel at home and abroad."

Be it Resolved, "That the American Medical Association, by action of its House of Delegates, desires to assure the highest type of professional care for the members of the Armed Forces. It is imperative that a permanent 'Civilian Medical Advisory Board' be established by the Secretary of Defense with the least possible delay. This 'Civilian Medical Advisory Board' to be composed of doctors of medicine, appointed from civilian life by the Secretary of Defense and responsible under policies established by him for the development of all medical policies, procedures and programs required by the medical and hospital services of the Armed Forces and to affect the utmost coordinated efforts between the several departments, boards and agencies of the Armed Forces."

In addition, the Council, with the view in mind of being helpful to the Armed Forces in the solution of their present medical personnel problem, recommends that the Board of Trustees introduce the following proposed resolution to the House of Delegates:

Be it Resolved, "That in the light of current medical personnel shortages, and in line with the accepted policy for coordination by the Armed Forces, every effort should be made to consolidate the facilities for the hospital care of the several Armed Forces.

"That the patient load in military hospitals, particularly of non-military patients, be reduced to the minimum consistent with the primary mission of the Armed Forces as defined by Congressional Acts."

Washington Letter

(From a Special Correspondent)

Nov. 11, 1948.

All 7 Physician Representatives Returned to Congress

The radical change in the complexion of the House of Representatives which was produced by the national elections did not remove any of the seven incumbents who are doctors of medicine. All were reelected. They are: (Republicans) Drs. Ivor D. Fenton, Pennsylvania; Walter Judd, Minnesota; A. L. Miller, Nebraska, and Frederick C. Smith, Ohio; (Democrats) E. H. Hedrick, West Virginia; Thomas E. Morgan, Pennsylvania, and Joseph L. Pfeifer, New York.

Oddly enough, none of the physician members of Congress is a member of the House Interstate and Foreign Commerce Committee, which handles virtually all proposed legislation pertaining to medical research and health economics. It is this committee which, in the 81st Congress, will hold hearings on national health insurance, expansion of the U. S. Public Health Service, extension of child health activities by the federal government, amendment of the Hill-Burton hospital construction law, food and drug legislation and modification of federal cancer and venereal disease control statutes.

However, with the Interstate and Foreign Commerce Committee due to be reorganized and many new faces added as a result of the election, it is not improbable that at least one physician will join its membership. Five of its Republican members were defeated. Three of its Democrats are gone, one by retirement, one by defeat at the polls and one by promotion to the Senate (Chapman, Kentucky). This means that eight Democrats and, in event of committee reassignments, one or more Republicans will be appointed to the committee.

Senator Murray Will Head Health Subcommittee

Reorganization of the Senate in January will make Senator James E. Murray (Democrat) of Montana chairman of the health subcommittee of the Senate's Committee on Labor and Public Welfare. Chairman of the full committee will be Senator Elbert D. Thomas (Democrat) of Utah. The reorganized health subcommittee, which will handle the bulk of medical and public health legislation to be considered by the Senate—including federal health insurance bills—probably will be composed of Murray, Pepper and Hill, Democrats, and Smith and Donnell, Republicans. Ball of Minnesota is the only member of this committee who was an election casualty.

McCarran and Rooney Due to Become Chairmen

Prospective chairman of the Senate Appropriations Subcommittee which will be in charge of the annual budget for the Federal Security Agency (which includes the U. S. Public Health Service, the Food and Drug Administration and the Social Security Administration) is Senator Pat McCarran (Democrat) of Nevada. He will replace the Republican incumbent, Senator William F. Knowland, of California. His "opposite number" in the House is expected to be Representative John J. Rooney (Democrat) of New York, who would replace Representative Frank B. Keefe (Republican) of Wisconsin.

Other committees, chiefly Labor and Public Welfare in the Senate and Interstate and Foreign Commerce in the House, are responsible for enabling legislation on federal participation in public health, subsidization of professional education, medical research and related programs. But it is the respective appropriations committees which hold the power on the amount of money that shall be expended on them.

Military Research Group on Field Inspection Trip

Accompanied by Army, Navy and Air Force staff assistants, members of the Research and Development Board's medical sciences committee departed October 26 for a ten-day air tour of military medical research facilities in North Carolina, Florida, Louisiana, Texas and Kentucky. Dr. Francis G. Blake, committee chairman, headed the party. Other members included Drs. Joseph F. Sadusk Jr., executive secretary, Lowell T. Coggeshall, John S. Lockwood, Wallace O. Fenn, James E. McCormack and William H. Fitzpatrick. Among those in the military contingent were Brig. Gen. George E. Armstrong, Deputy Surgeon General of the Army; Capt. W. P. Dana, head of the research division in the Bureau of Medicine and Surgery, Navy Department, and Brig. Gen. John M. Hargreaves, Deputy Air Surgeon. Installations which the group was scheduled to visit included the Naval Medical Research Laboratory at Camp Lejeune, N. C.; Orlando, Fla., entomologic laboratories of the Department of Agriculture; the Naval School of Aviation Medicine at Pensacola, Fla.; Randolph Field School of Aviation Medicine; Army Medical Field Research Laboratory at Fort Knox, Ky., and Eglin Field, Fla.

Nearly $1,000,000 in Research Grants Approved by Federal Council

A total of ninety-four medical research grants, aggregating $931,605, has been approved by the National Advisory Health Council, according to a tabulation obtained from the Division of Research Grants and Fellowships, National Institutes of Health. Favorable action on the applications, comprising thirty-eight continuation grants and fifty-six new projects, was taken at the October 22-23 meeting of the advisory council.

Tuberculosis received the largest share of the allocations—seven projects totaling $128,865. Investigations on metabolism and endocrinology ranked second, with $113,222 for sixteen separate investigations. Next in order were pathology, $81,390; physiology, $75,137, and biochemistry and nutrition, $69,437. Lesser amounts were approved for investigations in antibiotics, bacteriology, cardiovascular diseases, dental problems, gerontology, hematology, pharmacology, public health methods, radiobiology, sanitation, surgery, syphilis, tropical disease and virus and rickettsial infections.

Of the twenty fields of research with which the National Advisory Health Council is concerned, only one—malaria—was not represented by an award. Recipients of the grants will be announced later by the U. S. Public Health Service.

$455,715 in Federal Medical Research Grants Approved

Thirty-seven grants, totaling $455,715, for research in medical and related fields have been approved by the U. S. Public Health Service, on recommendation of the National Advisory Health Council. Recipient of the largest award, $64,620, was Dr. Esmond R. Long, for investigations in streptomycin therapy of tuberculosis. Among other recipients were Northwestern University Medical School, $48,000, for research in rheumatic fever; Duke University, $30,326, for work on relationship between diet and hypertensive vascular and renal diseases; Western Reserve, $27,884, for revascularization of the heart, and New York University, $27,985, for research in biologic aspects of schistosomiasis.

Next meeting of the National Advisory Health Council will be on February 18. Applications for research grants, to be considered at this meeting, must be received no later than December 1 by the National Institutes of Health (Division of Research Grants and Fellowships), Bethesda, Md.

Dr. Andrews Leaves on Special Malaria Mission to Iran

His mission reflecting the importance attached by the federal government to fostering of friendly relations with the Middle East, Dr. Justin Andrews left Washington late in October to lay the groundwork for an intensive malaria eradication program in Iran. According to the State Department, his services were requested by the Iranian government, which is anxious over extremely high incidence of malaria in the Azerbaijan region.

Dr. Andrews is head of the scientific section of the Communicable Disease Center operated by the U. S. Public Health Service at Atlanta, Ga. During World War II he served in the Army as a malariologist, first in the Mediterranean area and later in the Southwest Pacific.

Coming Medical Meetings

American Medical Association Interim Session, St. Louis, Municipal Auditorium, Nov. 30-Dec. 3. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Annual Conference of State Secretaries and Editors, St. Louis, Hotel Statler, Nov. 28-29. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

National Medical Public Relations Conference, St. Louis, Hotel Statler, Nov. 27. Mr. Lawrence W. Rember, 535 N. Dearborn St., Chicago 10, Director.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 5-9. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, Secretary.

American Academy of Pediatrics, Atlantic City, Chalfonte-Haddon Hall, Nov. 20-23. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Society of Tropical Medicine, New Orleans, Roosevelt Hotel, Dec. 5-9. Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Maryland, Secretary.

Association for Research in Nervous and Mental Diseases, New York, Waldorf-Astoria Hotel, Dec. 10-11. Dr. Clarence C. Hare, 700 W. 168th St., New York 32, Secretary.

Eastern Section, American Federation for Clinical Research, Philadelphia, Temple University School of Medicine, Dec. 4. Dr. J. Edward Berk, Temple University School of Medicine, Philadelphia, Chairman.

Puerto Rico, Medical Association of, Santurce, Dec. 10-12. Dr. J. Basora Defillo, Box 3866, Santurce, Secretary.

Radiological Society of North America, San Francisco, Dec. 5-10. Dr. Donald S Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, Dallas, Texas, Hotel Adolphus, Dec. 6-7. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 7-9. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, St. Louis, Dec. 2-4. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

COMMITTEE ON CHEMICAL WARFARE

The Research and Development Board of the National Military Establishment announces the appointment of Dr. W. Albert Noyes Jr., professor of chemistry, University of Rochester, as chairman of the recently established Committee on Chemical Warfare. The Committee will work with the Office of Civilian Defense Planning, National Military Establishment. Professor Arthur C. Cope, chairman, department of chemistry, Massachusetts Institute of Technology, has been appointed alternate to Dr. Noyes; others on the Committee are H. F. Johnstone, professor of chemical engineering, University of Illinois, with A. P. Colburn, University of Delaware, as his alternate; and Robert C. Swain, Vice President of the American Cyanamide Company, with R. T. Major, Vice President of Merck and Company, as his alternate. In addition to those named, members from the three military departments will serve on the Committee, the acting executive director of which is H. I. Cole, Ph.D., who served with the Chemical Warfare Service in World War I and in the Chemical Corps, U. S. Army, in World War II.

TRAINING IN CIVILIAN INSTITUTIONS

The following medical department officers have been accepted for training in the civilian institutions indicated: Colonel Charles J. Farinacci, Cornell University, cytologic diagnosis of cancer; Lieutenant Horace W. Shreck, Bellevue Hospital, New York, ophthalmology; Captain Charles I. Hamilton Jr., Franklin Hospital, San Francisco, clinical medicine; and for intern training as first lieutenants Sidney L. Brown, San Francisco City and County Hospital; Joseph C. Cullina, Gallinger Municipal Hospital, Washington, D. C.; Jack D. Fetzer, Hermann Hospital, Houston, Texas; John M. Kohl, Wilkes-Barre General Hospital, Wilkes-Barre, Pa.; Alfred Lubart, Morrisania City Hospital, New York; Tom E. Nesbitt, University Hospital, Ann Arbor, Mich.; John Thomas Olive, St. Joseph's Hospital, Kansas City, Mo., and Robert G. Richards, White Memorial Hospital, Los Angeles.

EXHIBIT AT CENTENNIAL CELEBRATION

At the Centennial Celebration of the establishment of Fort Bliss at El Paso, Texas, November 3-7, the Army Medical Illustration Service of the Army Institute of Pathology presented an exhibit made up of thirteen panels, one of which was a photomontage of "The Healthiest Soldier in the World." Five other panels supported the theme by showing how a recruit gains through preventive medicine, expert medical attention and Army service, and how the country profits from Army research and the Army training program for medical personnel. In the center of the exhibit a section was devoted to William Beaumont, an Army medical officer and America's first experimental physiologist, whose observations on the Canadian trapper Alexis St. Martin led to the modern studies on digestion and dietetics.

NAVY

COURSE IN AVIATION MEDICINE

Regular and reserve medical officers up to and including the rank of lieutenant commander may make application for the next course in aviation medicine to be held at the school of Aviation Medicine and Research, Pensacola, Fla., beginning Jan. 17, 1949. Instruction will be given in such subjects applicable to aviation medicine as cardiology, ophthalmology, otolaryngology and applied aviation physiology. Students will then be assigned to flight indoctrinal training and ground school work, after which successful students will be designated Naval flight surgeons. Applications must reach the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., prior to Dec. 10, 1948.

NEW NAVY INTERNS

The following recent graduates have accepted commissions as lieutenants (jg) in the Medical Corps Reserve for internship in civilian institutions under the Navy Medical Intern training Program: George F. Batten, Chelsea, Mass., to the Naval Hospital, Bethesda, Md.; Robert M. Clark, Canton, Ohio, to Mercy Hospital in that city; Leonard O. Congit, Los Angeles, to Queen of Angels Hospital in that city; Robert W. Hoellwarth, Lodi, Calif., to DePaul Hospital, St. Louis; Harold D. Lankford, St. Louis, to St. Louis City Hospital; Joseph J. Miller, Reinerton, Pa., to Reading Hospital, Reading, Pa.; David P. Morris Jr., Detroit, to Harper Hospital, Detroit; Eugene R. Odou, Los Angeles, to Los Angeles County Hospital in that city; David J. Seel, Bradenton, Fla., to Charity Hospital, New Orleans; Jack D. Stringham, Salt Lake City, to Latter Day Saints Hospital in that city; Robert B. Tator, New Haven, Conn., to Baylor University Hospital, Dallas, Texas; Wyman C. Tremblay, Hollywood, Calif., to Queen of Angels Hospital in Los Angeles; Mark M. Walter Jr., Lansdowne, Pa., to Philadelphia General Hospital, and Francis P. Weyrens, Hebron, N. D., to St. Mary's Group Hospitals, St. Louis.

OFFICERS REQUEST ACTIVE DUTY

The following reserve medical officers have requested active duty in the Navy: Comdr. William M. Cason, Atlanta, Ga.; Lieut. Comdr. Ulysses S. Geiger, North English, Iowa; Lieut. Charles E. Weber, Rochester, N. Y., and Lieutenants (jg) Victor G. Benson, Soldiers Grove, Wis., and Jerome Imburg, Richmond, Va.

PUBLIC HEALTH SERVICE

CLEARINGHOUSE FOR CHILD LIFE RESEARCH

The Children's Bureau in Washington, D. C., has established a clearinghouse for research in child life in response to numerous requests for a center that would promote interchange of information on current research in fields affecting child life. The clearinghouse will contact investigators for reports of studies in progress. It will not attempt to summarize or indicate the conclusions of research projects but will furnish accounts of the nature of the projects as reported by individuals and organizations. The clearinghouse grew out of a series of conferences held to review what is going on in research in child life. Further information may be obtained from Clara E. Councell, Director, Clearinghouse, Children's Bureau, Washington 25, D. C.

DR. EAGLE RETURNING FROM AFRICA

Dr. Harry Eagle, chief, research branch, National Cancer Institute, is returning from Africa where for several weeks he studied the effects of using arsenical compounds for sleeping sickness, a treatment which he helped develop in 1944-1945. Use of para-arsenosophenylbutyric acid for trypanosomiasis was developed by Dr. Eagle in collaboration with the Sleeping Sickness Services of the Belgian Congo, French Equatorial Africa, French West Africa, the Gold Coast, Nigeria, and the Firestone Plantation in Liberia. At that time Dr. Eagle was head of the U. S. Public Health Service Venereal Disease Research and Postgraduate Training Center located at Johns Hopkins Hospital, Baltimore. An account of this work appears in *Public Health Reports,* July 12, 1946, page 1019.

MEETING OF QUARANTINE OFFICERS

All medical officers in charge of the major quarantine stations of the Public Health Service, those in charge of medical examinations of visa applicants in Europe and Montreal, and representatives of the nonmedical quarantine inspection officers and sanitary inspectors held their first meeting in Washington September 20-24. The conference agreed on standard measures to modernize quarantine further to meet the demands of international commerce while still affording adequate protection against importation of disease. They voted unanimously to retain the present smallpox immunization requirements and to continue the rabies control work. Technical information was furnished by representatives of several organizations with work related to that of the Foreign Quarantine Division. The chief of the Canadian Quarantine and Immigration Medical Service was present as an observer and collaborator.

DR. DOULL TO DIRECT LEPROSY RESEARCH

The Federal Security Administrator announces that Dr. James A. Doull, chief, Office of International Health Relations, Public Health Service, has been detailed to the American Leprosy Foundation (Leonard Wood Memorial) as Director of Research with headquarters in Washington. Studies will be made on the epidemiology of leprosy and methods of treatment. The Foundation is now supporting epidemiologic studies in the Philippines and a special bacteriologic laboratory at Harvard Medical School. Dr. Doull was chairman of the medical advisory board, American Leprosy Foundation from 1940 to 1943. He formerly was a professor at Western Reserve University School of Medicine, and served as medical consultant to UNRRA and the Foreign Economic Administration. He joined the Public Health Service in 1943.

Dr. L. L. Williams Jr., medical director, will succeed Dr. Doull as chief, Office of International Health Relations. He has for twenty-six years been a specialist in malaria control research. He was head of the malaria commission to the China-Burma Highway and at the start of the war organized malaria control in areas of camps and war industries. Detailed to the Army, he was a malariologist in the North African Theater of Operations.

REGULAR CORPS APPOINTMENT AS SANITARIAN

Examinations for appointment in the Regular Corps in the grades of assistant sanitarian and senior assistant sanitarian will be held in the near future. An applicant for the assistant grade must be a citizen of the United States at least 21 years of age, have a bachelor's degree from a school of recognized standing, in one or more fields which are related to milk and food sanitation, have a master's degree from an approved school in public health or in a related science, and have had at least seven years of educational (exclusive of high school) and professional training and experience. An applicant for the senior assistant grade in addition must have had at least ten years of educational (exclusive of high school) and professional training and experience.

The written examination for both grades will be in bacteriology, chemistry, physics, epidemiology, administration and their relation to environmental sanitation in general and to milk and food control in particular. Information may be obtained from the Surgeon General, United States Public Health Service, Washington 25, D. C.

MISCELLANEOUS

NINETEEN ATOMIC RESEARCH PROJECTS

The Atomic Energy Commission has selected nineteen research projects in biology and medicine proposed by nongovernmental institutions in ten states for financial support. These are in addition to thirty-eight projects announced last May by the Commission. Following is a list of the institutions in which this research will be conducted, the subject of the research, and the director of the project:

COLORADO

- University of Colorado, Boulder
  - John R. Lacher—Study of Relationships Between Chemical Structure, Physical Characteristics and Biologic Activity in the Intermediate Metabolism of Nucleic Acid Derivatives
  - Theodore T. Puck—Study of the Radiation Chemistry of Bacteriophage Invasion and Reproduction in Host Cells

ILLINOIS

- Northwestern University, Evanston
  - J. Roscoe Miller—Establishment of a Radioisotopic Unit for Instruction, Research and Therapy

MASSACHUSETTS

- Massachusetts Institute of Technology, Cambridge
  - Robley D. Evans—Radiomedicine Research
- Arnold Arboretum, Harvard University, Boston
  - Karl Sax—Dosage Curve Under Varying Conditions of Time and Intensity of Radiation

NEW YORK

- College of Physicians & Surgeons, Columbia University, New York
  - David Nachmonsohn—Effects of Exposure to Radioactive Materials and to X-Ray Irradiation on Nerve Tissue
- N. Y. Post Graduate Hospital, New York
  - Marion B. Sulzberger—Skin Changes Produced by Low-Voltage Roentgen Ray Irradiation

NORTH CAROLINA

- N. C. University, Chapel Hill
  - H. D. Bruner—Measurement of Volume of Flow of Blood in the Kidney and Level of an Unanesthetized Man by Means of Radioisotopic Procedure

OHIO

- Ohio State University, Columbus
  - J. L. Morton—Establishment of Physical and Medical Principles in Use of Artificially Radioactive Cobalt 60 for Treatment of Cancer
- Western Reserve University, Cleveland
  - H. L. Friedell—Medical and Biologic Research on Toxicologic Effects of Thorium and the Comparative Effects of Various Types of Internally Distributed Ionizing Particles
  - Harland G. Wood—Intermediary Metabolism on Carbohydrates by Bacteria

OREGON

- University of Oregon, Eugene
  - Arnold L. Soderwall and Paul Risley—Localization of Radioactive Isotopes in Reproductive and Germinal Tissues During Periods of Quiescence and Activation
- Oregon State College, Corvallis
  - Joseph S. Butts—Mode of Action of 2-4-Dichlorophenoxyacetic Acid as Studied with the Use of C-14
  - V. H. Cheldelin and B. E. Christensen—Study of Vitamin-Amino Acid and Carbohydrate-Amino Acid Relationships Using C-14 as a Tracer Substance
- University of Oregon Medical School, Portland
  - Edward S. West—Degradation of Radioactive Cholesterol Fatty Acids and Ketone Bodies in the Animal Body

TEXAS

- Baylor University, Waco
  - Joseph H. Gast—Chemistry and Metabolism of Some Sulfur Oxides
- University of Texas, Austin
  - Jack Myers—Biologic Accumulation of Inorganic Materials by Algae

WASHINGTON

- University of Washington Medical School, Seattle
  - Robert H. Williams—Biologic Effects of Radioactive Sulphur

WISCONSIN

- University of Wisconsin Medical School, Madison
  - James A. Miller—Labeled Azo Dye Research

These projects will be administered by the Office of Naval Research under the joint program of support of fundamental scientific research.

ASSIGN ATOMIC ENERGY FELLOWS

Nine medical officers from the armed forces, one from the Public Health Service, and one from the British Royal Navy have been assigned to training centers for study under the Atomic Energy Commission fellowship program. The centers to which these officers have been assigned for six months are at the University of Colorado, Denver; Duke University, Durham, N. C., and Reed College, Portland, Ore. Following this six months' course in basic training, the fellows from the armed forces and Public Health Service are expected to be assigned to Atomic Energy Commission installations for field training. The medical officers assigned are as follows: Captain Donald E. Dement, U.S.N.; Captain Paul M. Hoot, U.S.N.; Surgeon Commander Dennis A. Hovenden, British Royal Navy; Lieut. Col. Clinton C. Maupin, U.S.A.; Lieut. Col. John H. Rust, U.S.A.; Lieut. Comdr. Elmer R. King, U.S.N.; Lieut. Comdr. Peter S. Kwiatkowski, U.S.N.; Capt. Edward A. Langdon, U.S.A.; Lieut. (jg) Garner L. Lewis, U.S.N.; First Lieut. Ellis Oster, U.S.A.; Dr. Samuel C. Ingraham, Surgeon, U.S. Public Health Service.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Brock, Jack	New Brockton
Clayton, Orville W.	Fort Payne
Fargason, Crayton C. Jr.	Dadeville
Hanks, Boyce L.	Monroe
Kennamer, Samuel R.	Montgomery
Lamb, Robert H.	Troy
Mason, Robert H.	Russellville
Nabers, Hugh C.	Birmingham

Arkansas

Bell, Henry Grady Jr.	Little Rock
Birdsong, Karl K.	Shiloh
Brogdon, Paul P. Jr.	Springdale
Clardy, Edgar K.	Hot Springs
Dicksinson, Rodger C.	Horatio
Leidinger, Karl J. Jr.	Monticello
Regnier, George G.	Parkdale
Scruggs, Joe Bartie Jr.	Little Rock
Silverblatt, Charles W.	Osceola

California

Aagaard, Carl M. J.	San Francisco
Connor, Harold L.	San Francisco
Jonte, Donald M.	Stockton
Kay, Fred M.	W. Los Angeles
Kempe, Charles H.	San Francisco
Kennedy, Dean M. Jr.	Beverly Hills
Latta, Harrison	Los Angeles
Lauder, Clark H. Jr.	Arcadia
Leavitt, Lewis A.	Manhattan Beach
Pedersen, Frank A.	Los Angeles
Pitcairn, Donald M.	San Francisco
Rickabaugh, Donald E.	San Gabriel
Scheppler, George C.	Sanitarium
Smith, Lloyd E. Jr.	Los Gatos
Wilson, Austin R.	Yucaipa

Colorado

Atkins, Dale M.	Boulder
Cowen, Homer C.	Salida
Lubchenco, Michael A.	Sterling
Philpott, James A. Jr.	Denver
Wheeler, Gordon M.	Denver

Connecticut

Andy, Orlando J.	New Britain
Keefe, Arthur T. Jr.	New London
Winternitz, William W.	New Haven

Delaware

Cordrey, Lee J.	Laurel

District of Columbia

Alper, Melvin G.	Washington
Carter, John P.	Washington
Dun, Alan Andrews	Washington
Hollander, Edward E.	Washington
Wilmer, John G.	Washington

Illinois

Carton, Robert W.	Lake Forest
Couri, Peter J.	Peoria
Cunningham, Clement P.	Rock Island
Dawson, Dwight Casner	Riverside
Douglas, Donald B. Jr.	Lake Forest
Duncan, Robert J.	LaSalle
Frederick, Laurence D. Jr.	Chicago
Friedman, Irving A.	Chicago
Goldman, Leo M.	Chicago
Green, Maurice R.	Chicago
Heck, Charles Voisin	Collinsville
Heifetz, Milton D.	Chicago
Hesselschwerdt, Gernon P.	Urbana
Katz, Irving A.	Chicago
Kutsunis, Harry T.	East Moline
Levinson, Julian D.	Chicago
McDonald, James E.	Oak Park
Matlavish, Richard T.	Christopher
Milewski, Stanley A.	Chicago
Mrazek, Rudolph G. Jr.	Chicago
Powers, William H.	Oak Park
Reis, Frederick M.	Chicago
Stewart, Homer E.	Hoopeston
Tuthill, Sanford W.	Mt. Vernon
Wilner, Warren K. Jr.	Chicago
Wright, John L.	Bloomington
Young, Robert L.	Chicago
Zdenek, Albert N.	Berwyn

Kansas

Gray, Charles L. II	Topeka
Lockard, Vernon M.	St. Francis
Martin, Jack N.	Topeka
Stitt, Ronald W.	Dodge City

Kentucky

Gittleman, Isaac W.	Louisville
Hopkins, Scovell M.	Ashland
Kinnaird, David W.	Lancaster
Moore, Clyde T.	Buechel
Smith, Robert C.	Covington
Upchurch, Dorris L.	Capito
Woodson, Hylan H. Jr.	Eddyville

Louisiana

Knight, Edward H.	New Orleans
McHenry, Armand G. Jr.	Monroe
Scott, Samuel M.	Oakdale

Massachusetts

Bonner, Joseph N.	Boston
Calkins, Evan	Newton
Carlisle, John C.	Boston
Fitzpatrick, Thomas B.	Brookline
Johnson, Robert M.	Haverhill
Keeler, Robert W.	Attleboro
Klein, Elihu I.	Pittsfield
Mack, Francis X.	Milton
Mackler, Edward D.	New Bedford
Parsons, Thomas C.	Boston
Rogan, Francis J.	Brighton
Roy, Joseph L.	Webster
Sudbay, James A. Jr.	Gloucester

Michigan

Bower, Donald W.	Detroit
Groat, Frank L.	Detroit
Hasegawa, Masato M.	Detroit
Hooper, Charles H.	Detroit
Kopp, Robert E.	Detroit
Kuipers, Siebe W.	Detroit
Lyttle, Sydney N.	Flint
McKeever, George E.	Detroit
Markey, Frank R.	Detroit
May, Donald G.	Detroit
Miller, Arthur A.	Detroit
Ritter, George	Detroit
Sokol, William M.	Detroit
Stillwater, Karl	Detroit

Minnesota

Burke, Edmund C.	Minneapolis
Halliday, Phillip V.	Virginia
Johnson, Herbert W.	St. Paul
Krawczyk, Henry J.	Minneapolis
Lerner, Aaron	Minneapolis
Nimlos, Kenneth O.	Stephen
Rozycki, Anthony T. Jr.	Blackduck
Thayer, Merrill H.	Minneapolis
Yaeger, John J.	Sanbórn

Mississippi

Brocato, Simone	Merigold
Gruich, Frank G.	Biloxi
Hesdorffer, Eugene	Canton
Mayfield, William B.	McComb
Wyatt, Sparkman H.	Lula

New York

Aquilina, Anthony M.	Buffalo
Auchincloss, Joseph H. Jr.	New York
Bergendahl, Emil Henry	Manhasset
Berstein, Theodore	Bronx
Black, Hugh D.	March
Bleich, Louis B.	Buffalo
Brodman, Harold R.	New York
Brummer, Donald L.	New York
Capraro, Vincent J.	Buffalo
Chassin, Norman	Buffalo
Chessin, Herbert	Far Rockaway
Ciepaitis, Victor J.	Brooklyn
Cooper, Norman S.	Riverdale
Delchamps, Harold J. Jr.	New York
Denman, Lewis G.	Livingston Manor
Dyckman, Jacob	New York
Eberle, Richard D.	Syracuse
Fialkowski, Edward A.	Buffalo
Fleming, Thomas C.	New York
Forman, Robert L.	New York
Franklin, William D.	Kew Gardens
Friedman, David B.	New York
Fugitt, George W. Jr.	Buffalo
Goodstein, Seymour	Brooklyn
Gordon, Hirsch L.	Bronx
Groff, Donald N.	Buffalo
Grover, Ralph W.	Bellerose
Hartman, John F. Jr.	Hamburg, N. Y.
Hayden, Richard A.	Brooklyn
Hoffert, Paul W.	New York
Hoffman, Joseph	Brooklyn
Hyman, George A.	New York
Jewett, Theodore C. Jr.	Buffalo
Leahey, Edward B.	Monroe
Long, John P.	Buffalo
McCarty, Frederick H.	Wellsville
Maclean, Donald W.	New York
Masterson, Joseph P.	Buffalo
Matlin, Melvin	Brooklyn
Mazat, Alfred O.	New York
Nunez, Edgar O.	New York
O'Brien, John R.	Bronx
Osinski, Walter A.	Albany
Payne, James N.	Elmhurst
Rogers, William J. III	Buffalo
Rutecki, Joseph E.	Buffalo
Schardt, Walter M.	Baldwin
Terry, Herbert S.	New York
Williford, Edward A. Jr.	New York

Tennessee

Bankston, Floyd N.	Knoxville
Black, Charles I.	Memphis
Cowan, Bennett Y.	Bristol
Doty, Robert D.	Rogersville
Hickman, James H.	Knoxville
Ogle, Homer C.	Sevierville
Smythe, Frank W. Jr.	Memphis
Taylor, Byron H. Jr.	Nashville
Whittle, Herbert P. Jr.	Knoxville

Utah

Brinton, Jay O.	Salt Lake City
Lubeck, Glenn H.	Ogden
Priday, Sidney M.	Smithfield
Southwick, Merlin P.	Salt Lake City
Taylor, Frederick R. Jr.	Provo

Vermont

Dimichele, John D.	Poultney
Muckley, Ralph W. Jr.	So. Woodstock

Virginia

Evans, Robert W. W.	Lynchburg
Gottschalk, Carl W.	Salem
Hough, Mac J.	Salem
Kelly, William E.	Charlottesville
Levy, David B.	Suffolk
Morris, John R. Jr.	Charlottesville
Morris, John S. Jr.	Lynchburg
Sager, William L.	Danville
Thornhill, Thomas M. Jr.	Lynchburg

West Virginia

Coury, John J. Jr.	Wheeling
Marvin, Samuel L.	Weirton
Sinnett, John F.	Superior
Squires, Russell D.	Fairmont

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

COLORADO

Committee to Review Newspaper Medical Advertising.—The Medical Society of the City and County of Denver, at the request for assistance from the advertising director of the *Denver Post,* has appointed a committee to review medical advertising for Denver papers. Members of the committee are Drs. Richard W. Whitehead, chairman, Roy L. Cleere, Maurice Katzman, Albert E. Evans and Herman S. Maul. The committee is to work in cooperation with the public policy committee of the medical society.

Expand Epilepsy Program.—Through a $5,000 annual grant from the Colorado Society for Crippled Children and Adults, the University of Colorado Medical Center, Denver, has expanded its epilepsy program. Dr. Harriot H. Hunter is director of the university's epilepsy clinic. The grant provides for a director, honorariums for two medical assistants, the services of a social worker, and for administrative services and supplies. Early projects include a registry of epileptics, an adult training program and a workshop to provide group therapy for parents as well as patients.

DELAWARE

State Medical Election.—At the annual September meeting of the Medical Society of Delaware, Dr. Mesrop A. Tarumianz, Farnhurst, was elected president for 1949; Drs. Gerald A. Beatty, Wilmington, secretary; Winfield W. Lattomus, Wilmington, treasurer, and James Beebe, Lewes, delegate to the American Medical Association, with Clyde C. Neese, Wilmington, as alternate.

ILLINOIS

Postgraduate Conference in Pekin.—The Illinois State Medical Society has arranged a conference for the Fifth Councilor District at the Pekin Country Club, Pekin, December 9. The speakers, all of Chicago, will be:

William T. Carlisle, Forewarning and Forearming in Obstetrics.
Chauncey C. Maher, Management of Cardiac Patients Pre- and Post-Operatively.
H. William Elghammer, Advances in Pediatrics.

At the dinner Dr. Percy E. Hopkins, Chicago, will discuss "Voluntary Prepayment Medical Care" and Dr. Chester C. Guy, Chicago, "Bleeding Peptic Ulcer."

Chicago

Lecture on Reconstruction of Face.—Sir Archibald McIndoe, chief of plastic surgery for the Royal Air Force during World War II, lectured on "Total Reconstruction of the Face Following Burns" at the University of Illinois College of Medicine November 10. Sir Archibald is senior plastic surgeon at St. Bartholomew's Hospital in London and surgeon at Queen Victoria Hospital in East Grinstead.

Dr. Lederer to Aid in Mexico's Hearing Program.—Dr. Francis L. Lederer, professor of otolaryngology and head of the department at the University of Illinois College of Medicine, has left for Mexico, where he will aid medical officials in formulating a national program for the hard of hearing. At the invitation of the Mexican undersecretary of health and welfare, he will travel through that country to conduct a survey of hearing and speech needs.

Survey of Cancer.—The Committee on Chicago-Cook County Health Survey reports that a questionnaire sent to doctors and hospitals in the city has indicated that more than 7,000 persons died of cancer and at least 15,000 new cases of cancer appeared in Chicago last year. The questionnaire was answered by 90 per cent of the physicians and 96 per cent of the hospitals queried. The next project will be to survey the problem of cancer in industry.

Dr. Lewy Receives Traditional Cane.—At the November meeting of the Chicago Laryngological and Otological Society Dr. Alfred Lewy was presented with the traditional cane of the society, which was started in circulation by the late Dr. Joseph C. Beck. It is held as the temporary property of the senior living member of the society and contains in its handle models of several otolaryngologic instruments. The late Dr. George E. Shambaugh was the preceding recipient of the cane.

Allergy Research Unit.—Northwestern University has established a research unit for allergy studies in the new allergy research laboratory under the general direction of Dr. Samuel Feinberg, chief of the division of allergy. Laboratory research is being directed by Dr. Saul Malkiel, newly appointed assistant professor of medicine at Northwestern. Initial support of the allergy research laboratory was implemented by grants from the U. S. Public Health Service and several pharmaceutical manufacturers.

Dr. Moruzzi at Northwestern University.—Dr. Giuseppe Moruzzi, Italian neurophysiologist, has been appointed to Northwestern University Medical School for a year of research by the Rockefeller Foundation, which last year established an annual visiting professorship in the university's Institute of Neurology. Dr. Moruzzi is director of the Institute of Human Physiology at the University of Parma, Italy, and professor of physiology in its medical school. He will devote most of his research to the physiology of the brain and the functional relation of the cerebellum to the cerebral cortex.

Five Illinois Professors Retire.—Five members of the faculty of the University of Illinois College of Medicine retired September 1, having reached retirement age: Dr. Selim W. McArthur, clinical professor of surgery; Dr. Clifford G. Grulee, Rush, clinical professor of pediatrics and former head of the department at Presbyterian Hospital; Dr. James H. Mitchell, Rush, clinical professor of dermatology and former head of the department of dermatology and syphilology at Presbyterian Hospital; Dr. Daniel B. Hayden, clinical professor of otolaryngology (Rush) and former head of the department at Presbyterian Hospital, and Dr. Morris Braude, clinical associate professor of psychiatry (Rush).

Certificates of Merit and Appreciation.—At a reception at the home of Chancellor Robert M. Hutchins of the University of Chicago, November 2, thirteen scientists of the university faculty were cited for their contributions to the war effort in presidential certificates of merit and of appreciation. Admiral Cary Jones, commandant, Ninth Naval District, and Lieutenant General Stephen J. Chamberlin, commanding general, Fifth Army, made the presentations. Among those receiving the certificate of appreciation were the following from the Toxicity Laboratory: Dr. Franklin B. McLean, first director of the Toxicity Laboratory; Dr. William B. Bloom, professor of anatomy; William L. Doyle, second director of the laboratory and associate professor of anatomy, and Dr. Eugene M. K. Geiling, chairman of the department of pharmacology. Among other faculty members receiving certificates of appreciation were William H. Taliaferro, Ph.D., chairman of the department of bacteriology and parasitology; Dr. E. S. Guzman Barron, associate professor of biochemistry, and Paul A. Weiss, professor of zoology. Among other Chicago scientists not on the faculty of the University of Chicago to be thus honored was Dr. Sidney O. Levinson, executive director of Michael Reese Research Foundation.

IOWA

Personal.—Dr. Hunter H. Comly was appointed assistant professor of pediatrics in the department of psychiatry at the State University of Iowa College of Medicine, Iowa City, effective September 1.

Dr. Rovenstine to Address Linn County Society.—At the December 16 meeting of the Linn County Medical Society in Cedar Rapids, Dr. Emery A. Rovenstine, New York, will speak on "Intravenous Use of Procaine and Its Derivatives." Drs. Stuart C. Cullen, Iowa City, and Florence D. Johnston, Cedar Rapids, will lead the discussion.

KANSAS

Refresher Course in Obstetrics and Gynecology.—A refresher course in obstetrics and gynecology will be presented December 6-8 at the University of Kansas Medical Center, Kansas City. Besides faculty of the University of Kansas, guest instructors will be Drs. John H. Moore, Grand Forks, N. D.; Lucien R. Pyle, Topeka; Lawrence M. Randall, Rochester, Minn., and Ray A. West, Wichita.

KENTUCKY

Hospital Advisory Board.—Dr. E. Bruce Underwood, Louisville, state health commissioner, has appointed five men as advisers on the administration of a state hospital plan. They are Dr. F. Guy Aud, Louisville, past president of the Kentucky State Medical Association; Dr. John W. Moore of the University of Louisville School of Medicine; Lee R. Curtis, Louisville, an attorney; Dr. Joshua B. Lukins, Louisville physician, and Mr. S. A. Ruskjer, former president of the Kentucky Hospital Association. They will advise Dr. Underwood on the distribution of $500,000 this year and the same amount next year to Kentucky hospitals eligible for this state money.

LOUISIANA

Personal.—In honor of Dr. Urban Maes, New Orleans, at Touro Infirmary where he served for fifty years, a bronze plaque was recently unveiled. Charity Hospital also honored Dr. Maes in a like manner for forty-three years of service to that institution.

Dr. Lippard Goes to University of Virginia.—Dr. Vernon W. Lippard, dean since September 1946 of the Louisiana State University School of Medicine, New Orleans, has accepted the deanship of the University of Virginia Department of Medicine, Charlottesville, effective Feb. 1, 1949. Dr. Lippard is a graduate of Yale University School of Medicine, 1929. Before going to Louisiana he was associate dean of the Columbia College of Physicians and Surgeons, New York.

MINNESOTA

Residual Beneficiary of Doctor's Estate.—The University of Minnesota Medical School, Minneapolis, has been named a residual beneficiary of the $150,000 estate of the late Dr. James S. Reynolds of Minneapolis. The estate is to be placed in trust for Dr. Reynold's sister, on whose death the remainder of the estate is to be used as a scholarship fund in the medical school.

Establish Rehabilitation Center.—A rehabilitation center has been established at 279 Rice Street, St. Paul. A medical advisory board of seven doctors appointed by the Ramsey County Medical Society guides the medical policies of the center, the aims of which are prevention of unnecessary handicaps, restoration of function if possible, use of residual function and adjustment of patient to any residual disability. The three sponsoring agencies are the Minnesota Society for Crippled Children and Adults, Junior League of St. Paul, and the Wilder Charity.

NEW YORK

Food Service Training School.—A Food Service Training School has been opened at Hudson River State Hospital, Poughkeepsie, for instruction of institution employees and the development of high standards of food preparation and service in state institutions. The first class began October 11.

Eastman Memorial Lecture.—De René J. Dubos, Sc.D., a member of the Rockefeller Institute for Medical Research, New York, delivered the Eastman Memorial lecture on "Cellular Structures Concerned in the Pathogenesis of Tuberculosis" at the University of Rochester Medical School amphitheater November 19.

Mental Health Research Clinic at Buffalo.—The State Department of Mental Hygiene, in cooperation with the University of Buffalo School of Medicine, will set up a mental health research clinic in alcoholism at two leading Buffalo hospitals. The state department has made a grant to the clinic to implement in part a demonstration program.

Postgraduate Instruction.—The Medical Society of the State of New York with the cooperation of the New York State Department of Health has arranged the following postgraduate instruction programs: For the Oswego County Medical Society Dr. L. Maxwell Lockie, Buffalo, spoke on "Management of Arthritis" on November 16, 8:30 p. m., at the Elks Club, Fulton. On November 17 Dr. Locke L. Mackenzie, New York, addressed the members of the Fulton County Medical Society on "Use of Cell Smears in the Early Diagnosis of Cancer" at the Hotel Johnstown, Johnstown, 8:30 p. m.

New York City

Society News.—The Division of Mycology of the New York Academy of Sciences recently heard Norman F. Conant, Ph.D., Duke University School of Medicine, Durham, N. C., lecture on sporotrichosis. At the inaugural meeting October 22, officers elected were Drs. Frederick Reiss, president, and Royal M. Montgomery, secretary.

Harvey Lecture.—Dr. George K. Hirst, chief, Division of Infectious Diseases, Public Health Research Institute of the City of New York, delivered the second Harvey Lecture of the current series at the New York Academy of Medicine on November 18, on "The Biological Significance of the Virus Hemagglutinins."

Dr. Brown Named Acting Chairman of Medical Board.—Dr. Samuel A. Brown, formerly president of the New York Academy of Medicine and dean emeritus of the college of medicine, has been named acting chairman of the board of trustees of the New York University—Bellevue Medical Center, succeeding the late Richard W. Lawrence, LL.D. The board was formed in May to direct the affairs of the new medical center, which includes, in addition to the college of medicine, the Institute of Rehabilitation, the Institute of Industrial Medicine and the University Clinic. The medical center is also responsible through its teaching faculty for a major portion of the medical care given at Bellevue Hospital. Dr. Brown is a graduate of the University Medical College (New York University), 1894.

Dr. Senn Goes to Yale.—Dr. Milton J. E. Senn, professor of pediatric psychiatry and director of the Institute of Child Development at Cornell University Medical College, has been appointed Sterling professor of pediatrics and psychiatry and director of the new Yale University Child Study Center. The center, which will include the Yale Clinic of Child Development, will help parents, teachers and others concerned with problems of children. It will contain a guidance nursery, film library and clinical resources to supply research and teaching mediums for students interested in growth, development, behavior and personality. Dr. Senn received his M.D. degree from the University of Wisconsin Medical School, Madison, in 1927. He was an assistant professor of pediatrics at Cornell University Medical College in 1939, and then was made associate professor of pediatrics in psychiatry. Last year he was promoted to professor and was made director of the Institute of Child Development.

OHIO

Dr. Brailsford's Lecture.—At a special meeting of the Academy of Medicine of Cleveland Dr. James F. Brailsford, Birmingham, England, lectured on "Radiographic Evidence of Metastasis in Malignant Diseases" November 19 at the Medical Library Auditorium, 8:30 p. m. Dr. Brailsford is radiologist to the Queen Elizabeth's Hospital and the Royal Hospital for Crippled Children.

Professor Birkeland Named Department Head.—Jorgen M. Birkeland, Ph.D., professor of bacteriology of the Ohio State University College of Medicine, Columbus, and a member of the department staff since 1935, was recently made chairman of the department succeeding William A. Starin, Ph.D., who retired this year as emeritus professor of bacteriology (The Journal, April 10, page 994).

Sunday Afternoon Health Lectures.—A series of Sunday afternoon health lectures, free to the public, are being presented by the Academy of Medicine of Cleveland through its Health Education Foundation at the Medical Library Auditorium, 4 p. m.

Nov. 28, Harry V. Paryzek, Cleveland, Medical Emergencies; Farrell T. Gallagher, Lakewood, Surgical Emergencies.

Dec. 5, Elliott P. Joslin, Boston, Diabetes Yesterday, Today and Tomorrow.

Jan. 30, Roy W. Scott, Cleveland, Medical Aspects of Heart Disease; Claude S. Beck, Cleveland, Surgical Aspects of Heart Disease.

PENNSYLVANIA

Tribute to Dr. Donaldson.—In tribute to his thirty years' service as secretary to the Medical Society of the State of Pennsylvania, Dr. Walter F. Donaldson, Pittsburgh, was presented by members of the society with a combination television-radio-phonograph at the recent centennial celebration in Philadelphia. Dr. Donaldson accepted the gift from the stage of the Academy of Music, Philadelphia, before more than 3,000 physicians, their wives and invited guests.

Philadelphia

Dr. DeLamater to Direct Research.—The department of dermatology and syphilology of the University of Pennsylvania School of Medicine has announced the appointment of Dr. Edward D. DeLamater as associate research professor. He will act as director of research in the department and develop a mycology laboratory. Dr. DeLamater, a graduate of Columbia University College of Physicians and Surgeons, New York, 1942, has recently served on the staff of the Mayo Clinic, Rochester, Minn.

Pittsburgh

Symposium on Lung Cancer.—The meeting of the Allegheny County Medical Society on November 16 at 9 p. m. was devoted to a symposium on cancer of the lung. Subjects presented were "Diagnostic Value of Bronchial Secretions in Cancer of the Lung," "Present Day Concepts of Lung Cancer" and "Diagnosis and Modern Management of Cancer of the Lung."

SOUTH CAROLINA

Public Health Appointment.—Dr. William H. Chapman of Bishopville has been employed to serve with the Division of Maternal and Child Health of the State Board of Health. His work will be principally educational with emphasis on child growth and better family life. He will be available as speaker to local medical groups. Dr. Chapman graduated from the University of Maryland School of Medicine, Baltimore, 1929, and in recent years has served in the Richland-Columbia Venereal Clinic.

Society News.—The South Carolina Society of Ophthalmology and Otolaryngology, meeting at Charleston, elected Dr. Pierre G. Jenkins of Riverland Terrace as president and Dr. Roderick Macdonald of Rock Hill, secretary-treasurer.——The North Carolina Eye, Ear, Nose and Throat Society elected Dr. James A. Harrill of Winston-Salem as president and Dr. MacLean B. Leath of High Point as secretary-treasurer.——Dr. John R. Harvin of Sumter was recently elected president of the South Carolina Pediatric Society, and Dr. J. Rufus Bratton of Rock Hill, secretary-treasurer.

UTAH

Dr. Lawrence to Direct Cancer Teaching Program.—Dr. Edwin A. Lawrence has been named professor of surgery (oncology), and director of the cancer teaching program in the University of Utah College of Medicine, Salt Lake City. Dr. Lawrence was formerly director of the Tumor Clinic at Yale University and more recently has been in practice in thoracic surgery in Salt Lake City. He is a graduate of Western Reserve University School of Medicine, Cleveland, 1935, and served on the resident surgical staff at New Haven Hospital, Conn. In 1938 he was made a W. H. Cushing fellow in surgery at Yale University and was instructor in surgery there.

VIRGINIA

College to Award Ph.D. Degree.—The Medical College of Virginia, Richmond, will add to the list of degrees it may award that of Doctor of Philosophy in medical and related sciences. The college will limit its selection of candidates for the degree to a few highly qualified persons interested in pursuing work in medical and related sciences.

Personal.—Dr. William T. Sanger, president, Medical College of Virginia, Richmond, has been appointed a member of the National Advisory Committee for the social work education study sponsored by the National Council on Social Work Education. Dr. Ernest V. Hollis is director of the study, for which the Carnegie Corporation has made a grant of $31,000. The study began on October 1 and is expected to be concluded June 30, 1949.

WISCONSIN

Annual Dearholt Day.—The University of Wisconsin Medical School, Madison, in cooperation with the Wisconsin Anti-Tuberculosis Association, is presenting the ninth annual Dearholt Day program in the Service Memorial Institutes Building, Madison, 3 p. m. November 23. Dr. William S. Middleton, dean of the medical school, will act as chairman. Dr. Edith M. Lincoln, New York, will speak on tuberculosis and children. Florence B. Seibert, Sc.D., Philadelphia, will discuss the component parts of tubercle bacilli and their relation to the tuberculin test. The program will be presented in Milwaukee both by the Marquette University School of Medicine and the Milwaukee County Medical Society on the preceding day and it will also service as a monthly meeting of the Dane County Medical Society at the Madison Club on Tuesday evening. Dr. Dearholt was executive secretary of the Wisconsin Anti-Tuberculosis Association from 1908 until his death in 1939.

WYOMING

State Medical Election.—The Wyoming State Medical Society installed Dr. George E. Baker, Casper, as president, and chose Dr. Dewitt Dominick, Cody, president elect; Dr. Peter M. Schunk, Sheridan, as treasurer, and Dr. Roscoe H. Reeve, Casper, delegate to the American Medical Association, with Dr. William A. Bunten, Cheyenne, as alternate.

ALASKA

Crippled Children's Headquarters.—The new $50,000 headquarters building of the Alaska Association of the International Society for Crippled Children was dedicated September 7 in Anchorage. Governor Ernest H. Gruening, Dr. Philip H. Moore, Mount Edgecumbe, orthopedic surgeon, Dr. C. Earl Albrecht, Juneau, territorial commissioner of health, and Dr. Catherine S. Sherwood, Juneau, director of the Crippled Children's Service of Alaska, took part. The center was completed this fall after three years of planning and fund raising to support the orthopedic hospital and the headquarters.

GENERAL

New Editor of Journal of Immunology.—Dr. Arthur F. Coca, Pearl River, N. Y., has resigned as editor of the *Journal of Immunology*, a position he had held since the foundation of the journal in 1916, and will now serve as associate editor. His successor is Dr. Geoffrey Edsall, Boston, director of the Antitoxin and Vaccine Laboratory of the State of Massachusetts.

Medical Mission to Colombia.—The Unitarian Service Committee has announced a medical mission to Colombia to be staffed by Drs. George H. Humphreys, New York, chairman; McKeen Cattell, New York; Rafael Domingues, Cleveland; Carney Landis, Ph.D., New York; Dr. Salvatore P. Lucia, San Francisco; Dr. Donovan J. McCune, New York, and Dr. Perry P. Volpitto, Augusta, Ga. Lectures will be given by the team on surgery, pharmacology, pathology, internal medicine, pediatrics, anesthesiology and psychology.

Southern Surgical Association.—The annual session of the Southern Surgical Association will be held at the Greenbrier Hotel, White Sulphur Springs, W. Va., December 7-9, under the presidency of Dr. Edwin P. Lehman, Charlottesville, Va. Among the subjects of papers to be presented are hyperthyroidism in children, surgical treatment of lesions of the suprarenal gland, partial hepatectomy with intrahepatic cholangiojejunostomy, amebic hepatic abscesses—prevention and treatment, and status of the surgical treatment of hypertension. The association dinner will be Wednesday evening at 7 o'clock, when Dr. Lehman will give the president's address.

Conference on Rehabilitation.—Community Organization for Rehabilitation will be the theme of the National Rehabilitation Association Conference at the Hotel Loraine, Madison, Wis., December 6-10. The program includes panel discussions on In What General Areas the Public and Voluntary Rehabilitation Agencies May Cooperate, Community Organization to Secure Adequate Legislation, Community Organization in Development and Use of Medical Rehabilitation Facilities and Community Organization for Public Relations. Requests for hotel reservations should be addressed to A. E. Towne, Rehabilitation Division, 320 State Office Building, Madison 2.

Society Elections.—The Southern Medical Association installed Dr. Oscar B. Hunter, Washington, D. C., as president, and chose Dr. Hamilton W. McKay of Charlotte, N. C., as president-elect at its recent convention in Miami, Florida. Cincinnati was selected as the convention city for 1949.——At the recent annual meeting of the American Society of Clinical Pathologists in Chicago October 12 to 15, Dr. Osborne A. Brines, Detroit, was installed as president, and Dr. James B. McNaught, Denver, was chosen president-elect. On the resignation of Dr. Alfred S. Giordano, South Bend, as secretary-treasurer, Dr. Clyde G. Culbertson, Indianapolis, was appointed to fill the unexpired term.

Van Meter Prize Award.—The American Goiter Association again offers the Van Meter Prize Award of $300 for the best essay on problems related to the thyroid gland. The award will be made at the annual meeting of the association in Madison, Wis., May 26-28, 1949, providing that essays of sufficient merit are presented. The competing essays should not exceed three thousand words and must be presented in English; a typewritten double-spaced copy must be sent to the Corresponding Secretary, Dr. Thomas C. Davison, 207 Doctors Building, Atlanta 3, Ga., not later than March 15, 1949. A place will be reserved on the program for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the association. This will not necessarily prevent its further publication in any journal selected by the author.

WHO Regional Organization.—The first World Health Organization's regional group was established at the conference of the South East Asia Regional Committee of the organization October 4 at New Delhi, India. It is the first such body among five or six to be set up in major geographic areas throughout the world as soon as the majority of countries in each area agree to participate. The regional organizations were authorized by the World Health Assembly last summer. Delegates from India, Siam, Ceylon, Burma and Afghanistan, together with observers from Nepal and French India as well as from the United Nations and its specialized agencies agreed on structure and program of the regional group. The World Health Organization's Executive Board will be requested to authorize by January 1 the establishment of the South East Asia Regional Office with Delhi proposed as its site.

Poliomyelitis Continues Epidemic in Some Areas.—According to the U. S. Public Health Service, the incidence of poliomyelitis continues above normal in a few areas although the decline is following the seasonal picture. A total of 830 cases was reported for the week ended November 4 as compared with

1,079 for the preceding week, 715 for the corresponding week in 1946, and a five year median of 489 for the week. Reported incidence declined in California from 206 to 198, in South Dakota from 121 to 58, in North Carolina from 42 to 29, in Ohio from 52 to 14, in Illinois from 41 to 21, in Wisconsin from 47 to 32 and in Iowa from 79 to 44. Incidence increased in Michigan from 39 to 52 and in Texas from 28 to 31. A total of 23,074 cases had been reported up to November 4, as compared with 22,377 in 1946, 9,195 in 1947 and a five year median of 11,952 for the corresponding period.

Ella Sachs Plotz Foundation.—The annual report of the Ellis Sachs Plotz Foundation for the Advancement of Scientific Investigation lists fifteen grants made during the current year to research workers in the United States, Europe and Asia. Grants are given in sciences related to medicine and usually will not exceed $500 but may be up to $1,000. Applications for the year 1949-1950 must be in the hands of the executive committee before April 15. Letters asking for aid must state definitely qualifications of the investigator and an accurate description of the research, the size of the grant requested and the specific use of the money to be expended. Applicants should state whether or not other foundations have been approached for financial assistance and what other sources of support are relied on for research. Applications should be sent to Dr. Joseph C. Aub, Massachusetts General Hospital, Fruit Street, Boston 14.

Dr. Armstrong Given Prentiss Award.—Dr. Donald B. Armstrong, New York, received the fifth Elisabeth S. Prentiss National Award in Health Education at the luncheon meeting of the American Public Health Association, Boston, November 9. Selection of Dr. Armstrong was based on his 1916 survey and study which led to the establishment of the Framingham, Mass., community health and tuberculosis experiment; his survey in 1920 that resulted in the first national health council, which he headed for several years; his work as secretary to the Milbank Memorial Fund Technical Board and his work as second vice president of the Metropolitan Life Insurance Company, New York, where he has been in charge of the health and welfare service for policy holders. The Prentiss Award was established in 1943 by the Cleveland (Ohio) Health Museum for encouragement of more and better work in the field of health education and is named in honor of the memory of the museum's first foundation benefactor, who also gave it its first home.

International Congress on Rheumatic Diseases.—The seventh International Congress on Rheumatic Diseases will be held at the Hotel Waldorf-Astoria, New York, May 30-June 3, 1949, under the sponsorship of the International League Against Rheumatism. The U. S. State Department will cooperate in issuing official invitations to various governments and rheumatism associations. Invited guests will be the members of the International League, the European League and Pan American League against Rheumatism with their constituent organizations. It is estimated that the program will include 80 to 100 papers, 70 invited discussants, 5 topics for panel discussions by about 30 participants and 15 clinics. Those who contemplate the presentation of papers should submit titles to the program committee for consideration before Jan. 1, 1949. Information may be obtained by writing Dr. Ralph Pemberton, 1901 Walnut St., Philadelphia, president of the International League, or Dr. J. Van Breemen, Keizersgracht 489 Amsterdam, Netherlands, secretary general.

Dr. Muller Delivers Sigma Xi Lectures.—Herman J. Muller, D.Sc., 1946 Nobel prize winner and professor of zoology at Indiana University, Bloomington, will present the results of his investigations on roentgen treatment of certain diseases in connection with the Sigma Xi Lectureship at colleges and universities in November, December and January. The lecture will be presented at the following institutions:

Nov. 15, Joint lecture to be held at Pullman, Wash., for the State College of Washington, Pullman, and the University of Idaho, Moscow.
Nov. 17, University of Washington, Seattle.
Nov. 19, Oregon State College, Corvallis.
Nov. 22, University of Oregon, Eugene.
Nov. 29, Stanford University, Palo Alto, Calif.
Dec. 1, University of California, Davis.
Dec. 3, University of Nevada, Reno.
Dec. 6, University of California, Berkeley.
Dec. 8, University of Utah, Salt Lake City.
Dec. 9, Brigham Young University, Provo, Utah.
Dec. 10, Utah State Agriculture College, Logan.
Dec. 13, Colorado A. and M. College, Fort Collins.
Dec. 15, Illinois Institute of Technology, Chicago.
1949
Jan. 18, The Abbott Research Laboratories, North Chicago, Ill.
Jan. 20, University of Wisconsin, Madison.
Jan. 21, Northwestern University, Evanston, Ill.

FOREIGN

Fund for Research on Rheumatism.—The Nuffield Foundation, a philanthropic organization in England, has received $1,800,000 from Captain Oliver Bird, wealthy Birmingham manufacturer, to promote research in the prevention and cure of rheumatism, according to the *Chicago Daily News.*

Textbooks on Nursing for Japan.—The American Red Cross, through the efforts of Edith Olson, Red Cross nursing consultant now in Tokyo, has given the Japanese Red Cross 130,000 pounds of paper stock which will be used to publish textbooks on home nursing, midwifery, nursing administration, public health and a reprinting of the "Nursing Procedure Manual." A portion of the paper has already arrived in Japan and production of the textbooks has begun.

Congress of Obstetrics and Gynecology.—The British Congress of Obstetrics and Gynaecology will be held in the Friends' Meeting House, Euston Road, London, July 1949. Papers will be presented by Dr. Joe V. Meigs, Boston, Mass.; Dr. Charles McIntosh Marshall, Liverpool; Dr. Gerald I. M. Swyer, London; Dr. Francis J. Browne, London, and Dr. Derrick M. Dunlop, Edinburgh. Owing to present difficulties in arranging hotel accommodations and travel, secretaries would like to have, by March 31, 1949 at the latest, the names of those who hope to attend.

Antituberculosis Drive in India.—The first nationwide BCG vaccination campaign in India, designed to lower the rate of tuberculosis among children and adolescents, was inaugurated in September at Madanapalle, near Madras. The program will be carried out jointly by the Indian health authorities and the World Health Organization, which last May sent a team of experts on tuberculosis to India at the government's request. Since transportation of BCG vaccine from Europe was unreliable, the World Health Organization also sent a pharmacologist to India to assist in setting up a laboratory which is now producing the vaccine. The number of tuberculosis cases in India is estimated at 2,500,000 annually out of a total population of 320,000,000, and the disease causes more than 500,000 deaths each year. The Indian program is part of the global antituberculosis campaign which the World Health Organization designated for priority action in 1949.

Marriages

Royal Green Jennings Jr., Thomasville, N. C., to Miss Treva Bullard Miller of Winston-Salem, October 2.

William Ralph Deaton Jr., Greensboro, N. C., to Miss Frances Kirksey of San Antonio, Texas, recently.

Michael Joseph Coffey, Belmar, N. J., to Miss Mary Jane Maas of Neptune at Asbury Park, September 18.

Charles M. Parker, Kelford, N. C., to Miss Anne A. Westphal at Fredericksburg, Va., September 4.

William Thomas Ellis, Schenectady, N. Y., to Miss Edna Margaret Murphy of Hamden, Conn., June 12.

S. Michael Erba, New Haven, Conn., to Miss Marcella La Reau Kytchen of Roanoke, Va., July 31.

Robert Lewis Nelson, New Berlin, N. Y., to Miss Catherine Rosemary Bertelli of Woodhaven, recently.

Ada Eleanor Biffar, Whitestone, N. Y., to Mr. Edward A. Ryan of Forest Hills, N. Y., recently.

Donald H. Glew Jr., to Mrs. Patricia Cummings Garrity, both of Washington, D. C., October 2.

Thomas Manley Flanagan to Miss Esther Ann Coyne, both of Norwich, N. Y., September 11.

John Thompson Prior, Syracuse, N. Y., to Mrs. Elizabeth Titus Troy of Binghamton, July 24.

Daniel H. Cannon, New Albany, Ind., to Miss Marilynn E. Carr of Delanco, N. J., October 2.

William H. Schlitzer, to Miss Helen Horan, both of Pottsville, Pa., in Philadelphia, July 17.

Antoni Mills Diehl to Miss Sybil Reid Bothwell, both of Newburyport, Mass., September 7.

Ira Deyo Le Fevre Jr., to Miss Helen Tate Rhodes, both of Schenectady, N. Y., July 24.

James N. Dewane to Miss Patricia Mullins, both of Menominee, Mich., September 11.

William E. Higgs to Mrs. Rae Myers, both of Cuba, N. Y., September 4.

Deaths

Abraham Myerson ⊕ Boston; born in Yanova, Russia, Nov. 23, 1881; Tufts College Medical School, Boston, 1908; served as clinical professor of psychiatry at the Harvard Medical School and the graduate school; professor of neurology emeritus at his alma mater; at one time on the faculty of St. Louis University School of Medicine; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member and formerly second vice president of the American Neurological Association; member of the American Psychiatric Association and the New England Society of Psychiatry; member and past president of the American Psychopathological Society; member of the Commission on Research in Mental Health, Commonweath of Massachusetts; served on the staffs of the McLean Hospital in Belmont and the Boston State, Beth Israel, Boston City, Boston Psychopathic, and Washingtonian hospitals; pathologist and clinical director of the State Hospital in Taunton, Mass., from 1914 to 1918; member of the Jewish Academy of Arts and Sciences; author of "Foundations of Personality," "Inheritance of Mental Diseases," "When Life Loses Its Zest" and other books; died September 3, aged 66, of cardiac decompensation.

William Payne Thompson, Princeton, N. J.; Columbia University College of Physicians and Surgeons, New York, 1924; formerly on the faculty of his alma mater; fellow of the American College of Physicians; member of the American Society for Clinical Investigation; president of the board of managers of the New Jersey State Hospital, Marlboro, and consultant at the Fitkin Memorial Hospital in Asbury Park; for many years on the staff of the Presbyterian Hospital; on the staff of the Mercer Hospital in Trenton; member of the board of trustees of the Trudeau (N. Y.) Sanatorium; died in the New York Hospital August 10, aged 50.

Edgar Ephraim Shifferstine ⊕ Tamaqua, Pa.; born Oct. 1, 1874; University of Pennsylvania Department of Medicine, Philadelphia, 1899; fellow of the American College of Surgeons; member of the American College of Hospital Administrators; director of clinics for rheumatic heart disease, state department of health; at one time surgeon in the U. S. Public Health Service reserve with the rank of major; president of the school board; served on the staffs of the Coaldale (Pa.) State Hospital and the Pottsville (Pa.) Hospital; director of the Tamaqua National Bank; died in the Abington (Pa.) Memorial Hospital August 22, aged 73, of carcinoma of the pancreas.

Charles Randolph Keith Swetnam ⊕ Prescott, Ariz.; born in Falmouth, Va., in 1882; Georgetown University School of Medicine, Washington, D. C., 1904; specialist certified by the American Board of Otolaryngology; past president of the Arizona State Medical Association and of the Yavapai County Medical Society; fellow of the American College of Surgeons; member of the American Academy of Ophthalmology and Oto-Laryngology and of the Pacific Coast Oto-Ophthalmological Society; a member and past president of the Prescott Community Hospital staff; died August 6, aged 66, of carcinoma of the prostate.

Wallace E. Belt, Dodge Center, Minn.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1889; died July 18, aged 91.

Harry Boyd-Snee, Los Angeles; Rush Medical College, Chicago, 1889; fellow of the American College of Surgeons; formerly practiced in South Bend, Ind., where he was on the staff of St. Joseph's Hospital; served during World War I; major, medical reserve corps not on active duty; died July 5, aged 79, of terminal bronchopneumonia.

Isham Lester Cummings ⊕ Ada, Okla.; Chicago College of Medicine and Surgery, 1912; on the staff of Valley View Hospital; died July 23, aged 58, of coronary occlusion.

Frank Daniel Elkavich ⊕ Troy, N. H.; McGill University Faculty of Medicine, Montreal, Canada, 1937; past president of the Cheshire County Medical Society; served during World War II; on the staffs of Quincy City (Mass.) Hospital and the Elliot Community Hospital in Keene, where he died July 27, aged 39, of injuries received in an automobile accident.

Isabella Maud Garnett, Evanston, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; formerly superintendent of Community Hospital, where she died August 23, aged 76, of uremia, hypertension and heart disease.

Arthur R. Hansen ⊕ Chicago; Chicago College of Medicine and Surgery, 1913; served during World War I; on the staff of the Henrotin Hospital, where he died September 11, aged 60, of hypostatic pneumonia following injuries received in a fall.

Charles Russel Hartsook ⊕ Wichita Falls, Texas; Medical College of Virginia, Richmond, 1904; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; past president of the Wichita County Medical Society; formerly councilor of the Third District of the State Medical Association of Texas; organizer of the Texas Society of Ophthalmology and Otolaryngology; affiliated with the Wichita General Hospital; died July 14, aged 74, of septicemia and myocarditis.

Euel Park Hathaway, Lawton, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1929; director of the city-county health department; died July 13, aged 45, of cirrhosis of the liver.

Frederick Henry Hollingsworth, Okmulgee, Okla.; Kansas City (Mo.) Medical College, 1901; formerly county clerk; died in Oklahoma City July 17, aged 74, of heart disease.

Theodore Holtan ⊕ Waterville, Minn.; Milwaukee Medical College, 1911; died August 22, aged 65, of heart disease.

Henry Pope Howard, Everett, Wash.; University of Pennsylvania Department of Medicine, Philadelphia, 1892; member of the American Medical Association; fellow of the American College of Surgeons; died July 24, aged 81, of lobar pneumonia.

Charles Franklin Junkermann, Columbus, Ohio; the Hahnemann Medical College and Hospital, Chicago, 1889; died August 29, aged 86, of arteriosclerosis.

William Wolf Kahn, Van Nuys, Calif.; Baltimore University School of Medicine, 1896; died August 31, aged 81.

William Joseph Kennedy ⊕ Newark, Ohio; Georgetown University School of Medicine, Washington, D. C., 1905; on the staff of the Newark City Hospital; died July 16, aged 69, of carcinoma of the bladder.

Olin Arvin Kimble ⊕ Murdo, S. D.; Rush Medical College, Chicago, 1908; member of the local draft board during World War I; for many years city councilman; vice president of the Jones County Bank; died August 24, aged 70, of leiomyosarcoma.

Henry Eugene King ⊕ Fullerton, Neb.; John A. Creighton Medical College, Omaha, 1903; past president and secretary of the Nance County Medical Society; served during World War I; city physician; died in the Veterans Administration Hospital, Lincoln, August 25, aged 72, of heart disease.

Sterling Covert King, Watsontown, Pa.; Temple University School of Medicine, Philadelphia, 1922; member of the American Medical Association; served during World War I; affiliated with the Williamsport (Pa.) Hospital; died September 16, aged 52, of heart disease.

Edward Larkin ⊕ Washington, D. C.; Georgetown University School of Medicine, Washington, 1908; professor of clinical orthopedic surgery at his alma mater; specialist certified by the American Board of Orthopaedic Surgery; member of the American Academy of Orthopaedic Surgeons; served overseas during World War I; affiliated with the Veterans Administration Hospital in Mount Alto, and the Georgetown University Hospital, where he died August 18, aged 66, of arteriosclerosis.

Marshall Aiken Leach ⊕ Canonsburg, Pa.; Northwestern University Medical School, Chicago, 1940; president of the Canonsburg Borough Council; certified by the National Board of Medical Examiners; affiliated with Canonsburg General Hospital and the Pennsylvania Training School at Morganza; died in St. Francis Hospital, Pittsburgh, August 26, aged 36.

Eli Long, Cresco, Pa.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the American Medical Association and the Medical Society of the State of New York; at one time on the faculty of the New York Post Graduate Medical School and Hospital, Columbia University; served during World War I; served on the staffs of Willard Parker and Presbyterian hospitals in New York; formerly medical director of the Bankers Trust Company; died August 3, aged 77, of coronary embolism.

George E. MacKinnon, Prentice, Wis.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1914; member of the American Medical Association; died in the Sacred Heart Hospital, Tomahawk, August 17, aged 61.

Edward Emmett McMahon, Omaha; John A. Creighton Medical College, Omaha, 1920; served as assistant professor of medicine at his alma mater; formerly medical director of Douglas County Hospital and on the staffs of Methodist, St. Joseph's, St. Catherine's and Immanuel hospitals; formerly affiliated with Veterans Administration Hospital in West Los Angeles; died August 19, aged 56, of coronary disease.

Edward Martin Miers, Mena, Ark.; University Medical College of Kansas City, 1910; member of the American Medical Association and the International College of Surgeons; president of the Polk County Medical Society; formerly on the staff of the Wesley Hospital in Kansas City, Mo.; died July 9, aged 62.

Isaac Julius Martinson, New York; University of Dorpat Faculty of Medicine, Russia, 1897; member of the American Medical Association; died August 24, aged 75, of coronary thrombosis.

Charles Carl Montano, Hartford, Conn.; Tufts College Medical School, Boston, 1935; member of the American Medical Association; served in the U. S. Public Health Service reserve attached to the Coast Guard from April 1943 to April 1946; affiliated with St. Francis and Hartford hospitals; died July 14, aged 38, of coronary thrombosis.

Oscar Nagel, Detroit; University of Michigan Medical School, Ann Arbor, 1932; member of the American Medical Association; served in the medical corps, Army of the United States, during World War II; died August 22, aged 48, of coronary heart disease.

Isaac DeWayne Nelson, River Rouge, Mich.; Meharry Medical College, Nashville, Tenn., 1945; interned at the Harlem Hospital in New York; certified by the National Board of Medical Examiners; on the staff of the Sidney A. Sumby Hospital; drowned while swimming near Amherstburg, Ontario, August 15, aged 29.

James Nisles Nesbitt, Gaffney, S. C.; University of Tennessee Medical Department, Nashville, 1889; member of the American Medical Association; died August 29, aged 81, of carcinoma of the colon.

Rea Parker ⊕ Smithfield, Va.; University College of Medicine, Richmond, 1908; also a graduate in pharmacy; past president and secretary of the Isle of Wight County Medical Society; county coroner and chairman of the county school board; active in Boy Scout work and in 1945 received the Silver Beaver; died August 2, aged 67, of coronary thrombosis.

Andrew B. Parr, Gonzales, Texas; Keokuk (Ia.) Medical College, 1892; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1905; died in Petaluma, Calif., August 10, aged 78.

Helen Myrtle Patton, Chicago; Northwestern University Medical School, Chicago, 1944; member of the American Medical Association; clinical assistant in the department of medicine at her alma mater; medical administrative assistant to the superintendent and a member of the hospital staff of Wesley Memorial Hospital, where she died August 4, aged 50.

John Birdsall Paul ⊕ Kansas City, Mo.; Kansas City (Mo.) Medical College, 1897; affiliated with the Research Hospital, where he died August 14, aged 77, of carcinoma with metastases.

Vincent Sylvester Pawelek Jr., ⊕ Houston, Texas; Baylor University College of Medicine, Dallas, 1943; interned at the Robert B. Green Memorial Hospital in San Antonio; served during World War II; killed instantly August 6, aged 29, in an automobile accident near Eunice, La.

Roy Gates Perham, Hasbrouck Heights, N. J.; Syracuse University College of Medicine, 1912; member of the American Medical Association; health officer and school physician for many years; on the staff of Hackensack (N. J.) Hospital; died August 4, aged 60, of cerebral hemorrhage.

Charles Pines, New York; University and Bellevue Hospital Medical College, New York, 1911; assistant clinical professor of dermatology and syphilology at his alma mater; on the staff of Bellevue Hospital; died in Mount Sinai Hospital August 21, aged 64, of coronary occlusion.

Mastin Lee Pipes, Moreland, Ky.; Hospital College of Medicine, Louisville, 1894; member of the American Medical Association; died August 14, aged 75, of injuries received when the automobile in which he was driving was struck by a train.

Lee Roy Plaugher ⊕ Denver; University of Colorado School of Medicine, Denver, 1927; served in France during World War I; affiliated with Porter Sanitarium and Hospital and St. Anthony Hospital, where he died August 10, aged 53, of arteriosclerotic heart disease.

Irvin Immanuel Pogue, Scott, Miss.; University of Tennessee College of Medicine, Memphis, 1916; member of the American Medical Association; died August 26, aged 57, of leukemia.

Clark Crandall Post, Barron, Wis.; College of Physicians and Surgeons of Chicago, 1893; served during World War I; died August 4, aged 81, of cerebral hemorrhage.

William Porter Pratt, Quincy, Mass.; Tufts College Medical School, Boston, 1907; member of the American Medical Association; on the staff of the Quincy City Hospital; died August 15, aged 71.

Alfred Pulford, Toledo, Ohio; Homeopathic Hospital College, Cleveland, 1885; died August 4, aged 85, of cerebral thrombosis.

Israel Kay Redd, Ellerson, Va.; Medical College of Virginia, Richmond, 1914; member of the American Medical Association; died in St. Luke's Hospital, Richmond, August 21, aged 55, of coronary artery disease.

Frances A. Ring, Chicago; Harvey Medical College, Chicago, 1903; member of the American Medical Association; served as examining physician at the Juvenile Court; died August 20, aged 86, of Buerger's disease and gangrene of the right foot.

Budd Robbins ⊕ Hanford, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; died August 17, aged 61.

Hector Morrison Ross, Chicago; University of Illinois College of Medicine, Chicago, 1926; member of the American Medical Association; affiliated with the Martha Washington Hospital; died August 27, aged 47, of coronary occlusion.

Hollace Rector Royster ⊕ Frankfort, Ind.; University of Illinois College of Medicine, Chicago, 1917; died August 6, aged 59.

Raymond Wentworth Runyan ⊕ Panama, Republic of Panama; Medical College of Ohio, Cincinnati, 1906; member of the Medical Association of the Isthmian Canal Zone; fellow of the American College of Surgeons; on the staff of the Hospital de Panama; died September 17, aged 63, of heart disease.

William Carl Schmidt ⊕ Augusta, Mo.; St. Louis College of Physicians and Surgeons, 1898; died in St. Joseph Hospital, St. Charles, August 9, aged 74.

Lester L. Scott, Siloam Springs, Ark.; University of Louisville (Ky.) Medical Department, 1907; member of the American Medical Association; died August 11, aged 65.

Levi Tillman Slayden, Tuckerman, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; Missouri Medical College, St. Louis, 1895; died August 23, aged 73.

Edward Byrnes Smith, Shelbyville, Ky.; Chicago Homeopathic Medical College, 1895; died August 5, aged 76, of angina pectoris.

James Walker Smith, Miami, Fla.; Northwestern University Medical School, Chicago, 1894; member of the American Medical Association; fellow of the American College of Surgeons; at one time practiced in Baguio and Manila in the Philippine Islands; died in Jackson Memorial Hospital August 14, aged 78, of bronchopneumonia.

Peder Soe ⊕ Kimballton, Iowa; Chicago Homeopathic Medical College, 1893; past president of the Audubon County Medical Society; served on the school board and town council; bank president; died in a hospital at Council Bluffs August 18, aged 86, of heart disease.

Alvin P. Stauffer, Hagerstown, Md.; Pulte Medical College, Homeopathic, Cincinnati, 1885; member of the American Medical Association; formerly member of the county board of education; died August 3, aged 91, of senility.

Thomas Turner Thomas ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1895; formerly on the faculty of his alma mater and of the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; fellow of the American College of Surgeons; an Affiliate Fellow of the American Medical Association; affiliated with Northeastern Hospital; died in Avon, N. J., August 7, aged 82, of arteriosclerosis.

James Handy Truitt, Glenn Dale, Md.; Chattanooga (Tenn.) Medical College, 1904; also a graduate in pharmacy; served during World War I; past president of the Prince Georges County Firemen's Association; formerly on the staff of the Casualty Hospital; died in the Mount Alto Hospital, Washington, D. C., August 8, aged 78, of heart disease.

Abraham Wallerstein, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1924; member of the American Medical Association; on the staff of the Beth Moses Hospital; died in Doctors Hospital August 8, aged 48, of carcinoma of the liver.

Wallace W. Wheat, Rosedale, Ind.; Eclectic Medical Institute, Cincinnati, 1899; died recently, aged 70.

Boyd Thompson Williams, Hudson, Wis.; Cincinnati College of Medicine and Surgery, 1901; died August 9, aged 71, of myocardial degeneration and purpura hemorrhagica.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Oct. 14, 1948.

First Human Case of "Black Disease of Sheep"

Mollaret and Guéniot have just reported to the Société Médicale des Hôpitaux de Paris observation of severe icterus in yellow atrophy of the liver due to an anerobic microbe, Clostridium oedematiens (Weinberg and Séguin 1915). A patient with general paralysis with positive Wassermann reaction (3 plus) in the blood and the special fluid was, after twenty-one days of observation, transferred in a generally good state to the ward of the authors for therapeutic malaria. Suddenly, the next day, he was seriously ill with a temperature of 39.5 C. (102.2 F.), subicterus at the level of the conjunctivas without hemorrhagic syndrome and a feeble pulse with a rate of 126. Abdominal examination did not reveal abnormality, but the dulness of the liver could hardly be outlined and there was oliguria with neither albuminuria nor glycosuria. The state of the patient became worse from hour to hour; the icterus increased in the afternoon, and the patient fell into a deep coma. He died during the night. Autopsy revealed the presence of Cl. oedematiens in a pure state, necrosis of hepatic cells, but the conservation of the architecture of the lobule and integrity of the vessels and of the bile duct. The kidneys presented necrosis of the epithelial cells. The good state of the pancreas and of the spleen and the conservation of the spermatozoa in the testicles prove that the aforementioned injuries were not due to the cadaveric autolysis, but to the toxin of the Cl. oedematiens. Hitherto this anerobe was only known as a cause of the peracute degenerative necrosing hepatitis of sheep, "the black disease." This first human case is worth being reported, as it adds a new causation for peracute severe primitive icterus. The authors emphasize that an immediate treatment with massive doses of specific antitoxin and penicillin might be effective in other possible cases.

Exchange Transfusions in Acute Leukemia

In the Paris letter of March 30, 1948, published in The Journal May 22, page 400, treatment of acute leukemia by means of exchange transfusions by Drs. Bessis and Bernard was reported. P. Croizat Révol and his collaborators reported to la Société Médicale des Hôpitaux de Lyon 5 cases of acute leukemia treated by the same method.

By repeated exchange transfusions (15 to 20 liters of injected blood), the authors obtained a noticeable lowering of the number of white blood cells, an increase in the number of red cells and a remarkable improvement in the medullary and blood formula in several cases, but this effect was only temporary (it lasted three months in 1 case). The patients died later, in spite of the repetition of the same treatment, combined sometimes with cautious radiotherapy.

Exchange Transfusions in Acute Azotemic Nephritis

Professor Pasteur-Valery-Radot, P. Milliez and their collaborators have just reported observation of a case of acute post abortum nephritis following septicemia due to Clostridium welchii.

Twenty-four hours after the beginning of this disease, one noted generalized icterus, extreme oliguria with hemoglobinuria, azotemia (2 Gm.) and anemia (1,600,000 red blood cells). Under the influence of penicillin therapy, immediately instituted, the septicemia disappeared. The second day of the disease, an exchange transfusion of 7 liters was made; this removed the effects of the icterus and did away with the anemia in a few hours, but the azotemic nephritis persisted. During sixteen days of oliguria, when the blood urea reached 4 Gm. per liter, the authors gave four exchange transfusions (totaling 21.35 liters). Suddenly, on the seventeenth day, diuresis was established without modification of the urea concentration of the urine, which stayed at 6 to 8 Gm. per thousand. The blood urea fell progressively to reach a normal rate on the twenty-fifth day. The author made a sixth exchange transfusion twenty-four hours after the reestablishment of diuresis. This treatment prevented the azotemia from increasing in spite of the extreme oliguria and permitted awaiting for restoration of diuresis. The authors insist on the harmlessness and ease of this method and on its advantages over peritoneal dialysis, intestinal perfusion and the artificial kidney, application of which is more difficult.

A. Tzank and J. Dausset have also used this treatment in 3 cases of anuria. In a case of scarlatinal nephritis with anuria, with blood urea at 3.25 Gm. per thousand, pulmonary edema and fall of arterial tension, an exchange transfusion gave a spectacular result: Diuresis was reestablished suddenly (3 liters) with a urea concentration at 15.11 Gm. per liter. Recovery was rapid and complete. Complete urinary tests showed that the renal balance was normal.

In a case of mercurial nephritis with extreme oliguria, the first exchange transfusion of 4.5 liters immediately improved the general state; next day diuresis was established. The urea concentration in the urine varied from 10.3 to 14.95 Gm., but the effect rapidly diminished in spite of repeated exchange transfusions (unfortunately in insufficient quantity). The patient died on the twenty-fifth day of her illness with toxic myocarditis. The amount of urine in twenty-four hours had reached 760.3 cc.; the blood urea was 5.5 Gm. per liter, and the urea in the urine 8.45 Gm. The autopsy showed big pale kidneys, without renal sclerosis, with lesions which were probably not irreversible.

In another case of mercurial nephritis with anuria, the authors gave eight exchange transfusions totaling 29.25 liters of blood, diluted one third. Diuresis was reestablished, blood urea was progressively reduced from 3.5 to 0.95 per liter, and urea concentration in the urine was increased.

The authors emphasize that the carrying out of the treatment must be based on the blood urea concentration. When an exchange-transfusion has lowered it from 2 to 3 Gm. one may reduce the quantity of blood the next time (never less than 4 liters per adult) and space the transfusions.

As to the action of this treatment, the authors think that new blood does not act by simple substitution, but that it provokes the indispensable metabolism not only at the level of the kidney but also of the liver and the entire organism.

Miscellaneous

The international review of medicine and therapeutics *Le Monde Médical* has just resumed publication.

The Third International Congress of Acupuncture will take place in Paris June 3-5, 1949. The general meeting of the International Union against Cancer which was to take place in Paris in 1948 has been postponed to 1949, on a date not yet selected.

Death of Professor Bezançon

Professor Fernand Bezançon, a member for thirty years of the Académie Nationale de Médecine, recently died at the age of 80 years. A bacteriologist schooled by Chantemesse and Vidal, he was at the same time a pathologist, physiologist and, above all, a clinician.

Several of his works are classics. He devoted himself to the study of tuberculosis and its social repercussions. He succeeded Letulle at the Hôpital Boucicaut; he pursued experiments in social politics. He succeeded Léon Bernard at the Clinique de de Laënnec, and became the great master of French phthisiology.

He was the leading member of the Société de la Tuberculose, of the Comité National de Défense contre la Tuberculose and of the Commission on Tuberculosis at the Ministry of Public Health until his last days.

ITALY

(From Our Regular Correspondent)

Florence, Sept. 30, 1948.

Blood and the Digestive Apparatus

At the National Congress of the Italian Association of Gastroenterologists, held in Chianciano under the chairmanship of Prof. Gasbarrini from the Medical Clinic in Bologna, reports were presented on the subject "Blood and the Digestive Apparatus." The speakers were Professors Marmont from the University of Genoa, Meneghini from Genoa and Torrioli from Rome. Marmont stated that consideration of the general phenomena of the vegetative sphere may demonstrate the necessity of an intercellular fluid endowed with at least three properties: (1) the vehicle for the nutritive substances, (2) sufficient supply of oxygen, and (3) removal of the refuse of cells. A thorough analysis has not been made of the importance of the elementary factors which take part in hemoplasmopoiesis. This problem may be of interest to the clinician in those cases in which it is uncertain at what point in the pathogenesis of disease the dietetic deficiency factor sets in and when the digestive change begins which causes the hemopathy. For erythropoiesis, vitamins, amino acid and mineral factors are considered necessary. The speaker stressed the importance of ascorbic acid, para-aminobenzoic acid, riboflavin and the so-called blood factors of the vitamin B complex. Three metallic elements, iron, copper and cobalt, are important in erythrogenesis. The predominant part is played by iron, which may be observed in ionizable form in the food. A deficiency of copper in the diet is responsible for a neuroanemic syndrome in sheep, and in human infants there is a characteristic hypercupremia associated with hyposideremia in infectious anemia. A deficiency of cobalt is the cause of an enzootic marasmus of cattle, while in man the administration of this metal may cause polyglobulism under normal conditions and may restore to normal the impaired erythropoiesis in tumoral or infectious anemia. One may distinguish three fundamental types of gastroenterogenic anemias: hyperchromic macrocytic, hypochromic mycrocytic and normocytic. The gastroduodenal factors are of primary importance in the determinism of the hypochromic microcytic, iron-deficient anemias. The speaker discussed iron-deficient chloranemia in women. He considers the concept of selective absorption, which has been emphasized by some American authors, as an unsufficient explanation, and he suggests the possible intervention of diencephalic neurovegetative factors which will provide a new orientation concerning chlorosis.

Professor Meneghini discussed the pathogenesis of anemias which follow gastric resection. Pernicious anemia resulting from a deficiency of the intrinsic factor may follow total removal of the stomach. Partial resection of the stomach may be followed by manifestations of pernicious anemia, or of mycrocytic hypochromic anemia, or even anemia of normocytic aregenerative type, which usually is normochromic. This last form may have its pathogenesis in a deficiency of a third gastric factor which stimulates erythropoiesis; this concept seems warranted by the results of animal experiments. The polyglobulism observed in patients with gastroduodenal ulcers has been interpreted as of gastrogenic origin. In view of the importance of the diencephalic centers in the pathogenesis of gastroduodenal ulcers and the existence of diencephalic polyglobulism, nervous centers for the pathogenesis of hyperglobulism must be admitted, but they may be influenced indirectly by an increased gastrohormonal activity.

Torrioli reported a series of studies concerning the relation of the alimentary canal to hemopoiesis. The starting point for these studies was the concept that pernicious anemia may be a disease with symptoms of multiple deficiencies among which there may easily be recognized a deficiency of the antianemic principle, of iron and of vitamin B. The complex problem may be clarified, in part, by the study and the complete examination of a large number of families whose members are affected by pernicious anemia. This work had been in progress at the Center for Blood Diseases in Rome. The speaker reported the following results of a two year follow-up on 200 families: (*a*) Hypochromemia with reduced absolute values of circulating hemoglobin and associated with hyperglobulism in some cases, has been the most frequent observation among relatives of patients with pernicious anemia. Anemia occurred most frequently in these persons as a sequela of any minimum pathologic cause, such as adenopathy and influenza. (*b*) The erythrocytometric curve is profoundly altered with multiform changes which may be related to three fundamental types as follows: deviation to the left, deviation to the right, enlarged and lowered curve or diphasic or flattened curve. (*c*) Oral disorders occur such as atrophy of the lingual mucosa or changes in the paradentium (familial dystrophic paradentiopathy). (*d*) Oligochylia occurs; this alteration may be less frequent and may not be present necessarily in persons who may present the other changes in a most pronounced degree.

The problem concerning anisocytosis is much more complex. According to the majority of authors, the erythrocytic curve will be restored to normal in patients who have recovered definitely from pernicious anemia, and it should therefore be considered as linked with a deficiency of the antianemic prinicple. Starting from this concept, the speaker and his co-workers concluded that patients who recovered from pernicious anemia did not present a normal erythrocytometric curve, but showed the fundamental changes which were observed in their parentage, after the disappearance of the megalocytic generation. The authors also concluded that the ground on which pernicious anemia may develop is characterized by a syndrome of a gastrointestinal lability which is manifested by a hypofunction of all the mucosae. But besides of this debility one must consider a hematic abnormality which is manifested by decisive alterations of the red cells and with a constant deficiency of circulating hemoglobin; i. e., one which predisposes a person to easy anemization resulting from inadequate causes. The speaker does not believe that it may actually be possible to establish that all these abnormalities may be considered as congenital, or that on the contrary they may be related only to gastrointestinal lability. A solution for these important problems may be achieved during subsequent development of these investigations.

BUENOS AIRES

(From Our Regular Correspondent)

Sept. 15, 1948.

Treatment of Cardiac Insufficiency by Ligating the Vena Cava

In a previous letter on the work of Pedro Cossio and J. Perianes (The Journal June 12, 1948, p. 659), reference was made to their experiments for relieving congestion of the lungs due to insufficiency of the left ventricle or mitral stenosis. In continuing the experiments, these authors attempted to reach their goal in two ways: (1) by accelerating the release of stagnated blood in the lesser circulation by anastomosing a pulmonary vein or a branch of the arteria pulmonalis with an extrathoracic vein or (2) by decreasing the amount of blood which passes through the right ventricle. They hoped to obtain this purpose (1) through tricuspid valvotomy and (2) through diminution of the venous blood coming back to the heart. At the beginning of the experiments, the vena cava inferior was narrowed in different degrees above the outlet of the venae suprahepaticae, but with little success. Almost all the animals died because of thrombosis, intestinal infarcts or intrahepatic hemorrhages. It was difficult, indeed, to produce stenosis sufficient to diminish the pressure in the lesser circulation and at the same time not produce the aforementioned complications.

Ligation of the vena cava inferior above the suprahepaticae, reducing its lumen one-half, provokes an abrupt fall of the pressure in the right side of the heart and the arteria pulmonalis; on the other hand, ligation of the vena cava beneath the renales diminishes the pressure less, but more gradually, and does not provoke any functional disturbance.

As ligation of the vena cava has already been done for such other purposes as phlebothrombosis and thrombophlebitis after childbirth, it was decided to do it in cases of cardiac insufficiency which could not be controlled by medical treatment. The first attempt with local anesthesia in the zone of the incision failed because of violent pain provoked by detachment of the peritoneum. In 2 other cases general anesthesia with ether was used, but the operative accidents were so great that this method was abandoned, although the patients recovered and their cardiac condition was improved. Five more patients have been treated, all under local anesthesia, but this time combined with truncal anesthesia of the six or eight last intercostal roots and of the lumbar roots, and this with full success.

Before the operation, most of the patients were moribund. Two complications must be mentioned: phlebothrombosis and hypotension after the operation. Phlebothrombosis may be avoided by administering heparin or dicumarol for several days. The hypotension is more frequent. It is necessary to control the blood pressure during the whole operation and each hour afterward. It can be controlled by the Trendelenburg position and the usual analeptics. The results can be considered satisfactory. The dyspnea and the congestion diminish or disappear; the patient does not need to sleep sitting up; the venous pressure diminishes and does not rise when the lower extremities are elevated, and generally to further intensive medical treatment is not necessary.

However, the number of cases is yet too small for one to judge the value of this new procedure and to make definite interpretations.

Finally, the authors have ligated in animals all the great extrathoracic venous trunks with exception of the venae portae, affluentes and renales. The tolerance has been good. More cannot be said for the moment.

Sensitivity to Streptomycin

Drs. R. Cucchiani Acevedo and S. Erdstein reported to the Argentine Society of Tuberculosis observations among nurses who administer streptomycin to tuberculous patients. In 7 nurses, almost simultaneously, rosy and intensively pruriginous papules appeared on the fingers, sometimes preceded by erythema; later, vesicles developed with intense pruritus, swelling, perionyxis, vesiculation, fissures and desquamation. Later, the exanthem appeared with the same symptoms at the bend of the elbow; there was pruritus in both eyelids with sensation of drowsiness, periorbital edema, conjunctival congestion and photophobia. Similar phenomena have been observed in other institutions. The observations made by Rauchwerger and his co-workers (The Journal, Feb. 28, 1948) seem to be similar to those of the authors.

All the affected nurses had been in contact with the drug for many months, but the symptoms appeared only in the last eight weeks; it is therefore supposed that the hypersensitivity develops only after prolonged exposure to the drug. The localizations in the elbow and periorbital areas are explained by the fine nebulization which takes place when the injection is prepared by the nurses. Diphenhydramine hydrochloride ("benadryl hydrochloride") and "antistin" (2-[*N*-phenyl-*N*-benzyl-aminoethyl] imidazotin) did not give favorable results; however, autohemotherapy diminished the pruritus. Desensitization with 25 units of streptomycin intradermally produced pruriginous erythema with exacerbations when 50 units were injected.

As a prophylactic measure, some nurses prepare the solution and others inject it, using gloves and spectacles, avoiding the vapor by cooling the liquid before opening the bottle. Since then new cases have not been observed in the nurses. In 2 nurses not in contact with the drug for a month or so these manifestations disappeared completely but reappeared when they again were handling the drug.

The intradermal reaction should be carried out periodically with all the persons exposed to streptomycin, and a nurse should be temporarily withdrawn from the service when the first positive signs appear. It must be realized that patients treated with streptomycin might have such reactions when, after this medication has been stopped, the drug is readministered.

Number of Physicians in the Argentine

The National Direction of Investigations, Statistics and Census in Buenos Aires has published the results of a census of physicians and related professions in the Argentine in 1947. The sum total of practicing physicians is 18,301, 7,588 of whom practice in the capital, Buenos Aires, and 4,880 in the province of Buenos Aires. There are 6,643 dental surgeons. Seven hundred and twenty-five of the 3,548 midwives are in the capital, Buenos Aires.

Brief Items

Dr. Max A. Goldzieher, New York, gave several lectures in Buenos Aires, before the Argentine Medical Association, on the endocrine aspects of the arterial hypertension.

The Argentine Society for the Study of Sterility has been founded in Buenos Aires, similar to the societies already existing in other countries, under the chairmanship of Dr. Juan Carlos Ahumada, titular professor of gynecology. During the first session, in the Faculty of Medicine, Dr. John P. Greenhill (Chicago) addressed the audience on "Artificial Insemination."

The First Congress on Thoracic Surgery has been held in Buenos Aires under the chairmanship of the titular professor of this specialty, Dr. Jorge A. Taiana.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Oct. 8, 1948.

Mannitol-Indole-Negative Members of Genus Shigella

In a recent paper, Dr. B. Rangel Pestana, of the Adolpho Lutz Institute, the central laboratory of the São Paulo State Department of Health, reports his study of several strains of Shigella dysenteriae that, contrarily to what is stated in Bergey's textbook, do not ferment raffinose and adonitol. A comparative study of S. dysenteriae strains and other mannitol-indole-negative organisms isolated from clinical cases of dysentery and similar to S. dysenteriae in morphologic, staining, cultural and biochemical characteristics, although serologically different, revealed, for the first time, the occurrence in São Paulo of Shigella sp. Sachs Q771. The practical value is obvious, for if this type is regarded, as it was until recently in several countries, as inagglutinable Shigella, the use of Shigella antiserum which would be recommended as the specific treatment would be of no value. Sorbitol and l-arabinose are the means to differentiate S. dysenteriae from Sachs type Q771, but the differentiation is not possible by morphologic, staining and cultural characteristics or by routine biochemical tests. S. dysenteriae fails to ferment any of those carbohydrates, while culture of type Q771 produces, as a rule slowly, an acid reaction. However, the only representative strain of Shigella sp. Sachs Q1167 examined by Pestana, which was received from the Connecticut State Department of Health, presented the same biochemical behavior as did Shigella sp. Sachs Q771, although they are serologically distinct; this proves the necessity of typing by means of specific serums. Unless the contrary can be shown by future investigations, the S. dysenteriae strains repeatedly observed by the author as well as strains of type Q771, when compared with those of Wheeler and Stuart, permit the differentiation, by means of l-arabinose, of S. dysenteriae from the Sachs indole-negative types, as the latter produce acid from this carbohydrate, whereas the contrary occurs with S. dysenteriae. The distinction between these types is based on serologic tests.

The Sachs types will introduce modifications in the present taxonomic systems. Borman, Stuart and Wheeler, in a detailed study on the taxonomy of the family Enterobacteriaceae, to which the Shigella genus belongs, speak of the probable immediate necessity of designating varieties in the non-mannitol-fermenting group, but express the opinion that it is still too early to determine the exact place of germs recently described as of the Sachs type. However, the paper by Wheeler and Stuart excludes from the genus Shigella some Sachs types and confirms the inclusion of the remaining strains, in this manner defining their taxonomic positions.

On the basis of his experiments, Pestana insists on the necessity of the routine use of cultures and S antiserums in agglutination tests. Beside many of the so-called inagglutinable Shigella organisms reported, which are, in fact, not S. dysenteriae, but Sachs indole-negative types, a greater number exists which owe their inagglutinability to the use of R forms instead of S forms. He also states that both the S and R forms of S. dysenteriae are toxic. Under the same conditions, neither S nor R strains of Shigella sp. Sachs Q771 showed toxicity.

Peritesticular Reaction in Leishmaniasis of Guinea Pig

In his studies of spontaneous leishmaniasis of the guinea pig, Dr. C. Magarinos Torres, of the Division of Protozoology of the Oswaldo Cruz Institute, Rio de Janeiro, disclosed that male guinea pigs given injections of Leishmania enriettii (saline suspensions of cutaneous lesions from another infected guinea pig) in the peritoneum showed curious changes in the tunica vaginalis. As a result of such changes, induration of the epididymis as well as the formation of a definite juxtatesticular nodule was observed, but without any involvement of the testis and the epididymis themselves. The histologic picture is rather complicated. In the early stages it resembles in some aspects the Shwartzman phenomenon, while certainly not identical to it, as could be easily inferred by the entirely different factors at work in the 2 cases. Later on and gradually the leishmaniotic granuloma containing a large number of parasites (L. enriettii) appears, accompanied by hemorrhages, thrombosis and suppuration, which are so prominent in the early stages. Further research is needed in order to establish the exact mechanism of this peritesticular reaction. The possibility of another infectious disease at work has not so far received confirmation.

Report on Patients with Heart Disease

Dr. Reinaldo Chiaverini reported a study of 429 patients with heart disease attended at the Misericordia Hospital of São Paulo. The causes were, in decreasing order of frequency, arterial hypertension in 31 per cent of the cases, coronary arteriosclerosis in 22 per cent, cardiovascular rheumatism in 16 per cent, syphilis in 13 per cent, American trypanosomiasis (Chagas' disease) in 7 per cent, pulmonary hypertension in 3 per cent, and other causes in 8 per cent. In more than one third of the cases there were several causes in the same patient, the association of arterial hypertension and coronary sclerosis (17 per cent), and syphilis and arteriosclerosis hypertension (6 per cent) being the most common. Cardioarticular rheumatism and American trypanosomiasis were the most frequent independent causes of heart disease, while arterial hypertension and coronary sclerosis were the most frequently associated causes, together or with other disease. The principal cause of aortic insufficiency was syphilis (63.5 per cent of the cases), followed by rheumatism (33.8 per cent) and other causes (2.7 per cent). In 22 cases (or 5.1 per cent) a severe, chronic myocardial disease was diagnosed of undisclosed cause. In only 12 cases (2.7 per cent) myocardial infarct was the cause of the trouble, which seems to indicate that this disease is not frequent in the economically lower part of the city population which is served by the Misericordia Hospital. Congestive cardiac failure was present in almost 90 per cent of the patients, while the most frequent disturbances of rhythm and conduction were branch block (12 per cent), auricular fibrillation (12 per cent) and different degrees of auriculoventricular block (3 per cent). The disease presenting the greatest tendency to disturb the conduction system of the heart was American trypanosomiasis, which caused auriculoventricular block in 10 per cent of the patients and branch block in 40 per cent. Rheumatic and sclerotic diseases of the heart were the most common causes of auricular fibrillation, being present in 21.4 per cent and 17.8 per cent, respectively.

Esophageal Electrocardiogram in Posterior Infarction

In view of the difficulties often encountered in the electrocardiographic diagnosis of old posterior infarction, multiple esophageal leads were taken by Drs. Aarão Benchimol, Paulo Schlesinger and Murilo Cotrim of Hospital Moncorvo Filho, Rio de Janeiro, in 11 patients in whom the presence of infarction was suggested by the usual standards and unipolar extremity leads or by a positive clinical history. The configuration of the normal esophageal electrocardiogram was studied in 3 patients, with particular reference to the shape of the QRS complexes recorded at the auriculoventricular transition. A classification of posterior infarction is presented according to extension and depth of myocardial involvement as judged by esophageal leads.

Although posterior infarction can usually be recognized by standard leads and the unipolar lead of the left leg, there are certain cases in which esophageal leads are required for a positive diagnosis. Multiple leads at various esophageal levels should always be taken, since an incomplete exploration may occasionally fail to reveal the presence of localized lesions of the posterior wall of the left ventricle.

An Unusual Case of Endometriosis

A case of endometriosis in a uniparous white Brazilian woman, aged 43, is reported by Prof. Clovis Corrêa da Costa of the Faculdade de Ciencias Medicas of Río de Janeiro. The patient stated that since she was 25 she has noticed hard, painful nodules in the inner aspect of the thighs, which always got red before menstruation and finally bled. She also complained of dysmenorrhea. The nodules showed scarlike changes after menstruation, preceding new ones which appear soon afterward. About seven years ago similar formations appeared in the lower mammary grooves on both sides, on the pectoralis regions and neighborhood of the axillary plicae. Gynecologic examination showed retroflexed uterus with a small fibroid in its posterior aspect.

Reference is made by Prof. Corrêa da Costa to 2 other cases of external endometriosis, one on the internal aspect of the thigh and a similar case on the hand.

Correspondence

HEMORRHAGE FROM ESOPHAGEAL VARICES

To The Editor:—In the February 28 issue of The Journal, page 616, a paper entitled "The Hemorrhagic Tendency in Congestive Splenomegaly (Banti's Syndrome)" appears; this was first presented by Dr. L. M. Tocantins at the annual session of the American Medical Association, June 12, 1947. He referred to a case of hemorrhage from esophageal varices treated by tamponade at the Pennsylvania Hospital, Philadelphia, in May 1945.

Since this was apparently the first recorded instance of treatment by this method, I thought the enclosed photographs of roentgenograms of the patient taken with the balloon in place might be of interest. Associates and I used a Miller-Abbott tube and balloon. Pressure was maintained by connecting the balloon to a mercury sphygmomanometer. The tube was held in place by a tie placed around the head and secured at the nares.

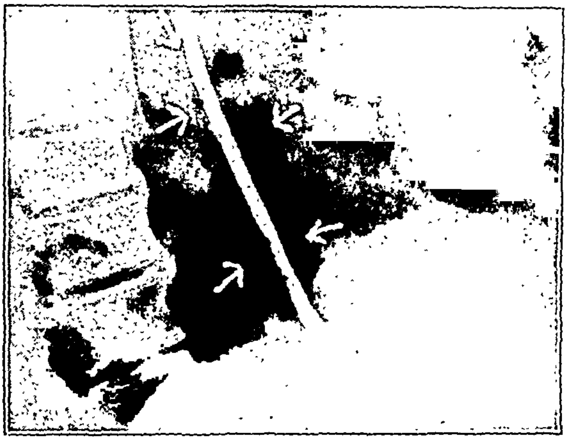

Fig. 1.—Oblique view of esophagus and cardia with balloon inflated.

This was one of several cases of bleeding esophageal varices so treated at that time. In this small series of cases, as an emergency life-saving measure, it was of definite value.

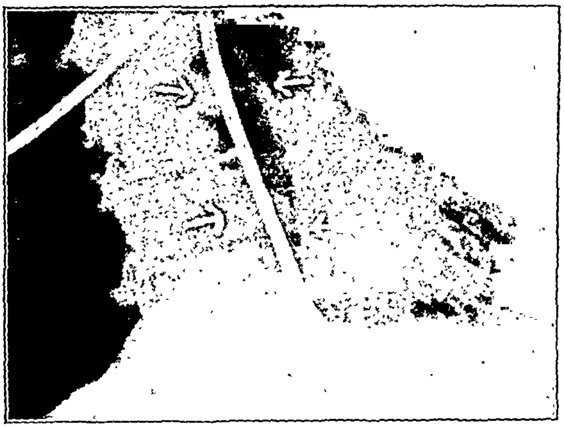

Fig. 2.—Lateral view of esophagus and cardia with the balloon inflated. The arrows indicate the air shadow of the inflated balloon in the lower end of the esophagus and cardiac end of the stomach.

The first patient was in extremis when treatment was instituted, and died six hours later. The second case was complicated by far advanced hemochromatosis, and the patient died two days following intubation. Both of these patients stopped bleeding, as evidenced by absence of blood on gastric suction. Both cases at post mortem showed evidence of esophageal varices and effective placement of the balloon. The third case is the one discussed by Dr. Tocantins. A fourth case, in a woman of 35 years, was diagnosed as Banti's syndrome complicated by bleeding esophageal varices. Her response was as dramatic as that in the third case. She left the hospital ten days after admission, asymptomatic.

Since returning from the service, we are at present enlarging our small series. Dr. Tocantin's modifications have been proving effective. In one case, a three lumen tube was passed so that tube feeding could be used while the balloon was in place. We hope to present this material as the subject of a report in the near future.

Edward W. Bixby Jr., M.D.,
Pennsylvania Hospital, Philadelphia.

CHLOROMYCETIN

To the Editor:—As you know, the October 9 issue of The Journal has an editorial on chloromycetin on page 432. The editorial states that "similar therapeutic effects were recorded with embryonated eggs infected with psittacosis virus, variola virus or influenza A virus." It further states that "chloromycetin was equally effective with mice infected with Japanese encephalitis." Both of these statements are incorrect. In their original paper Smadel and Jackson (*Science* **106**:418 [Oct. 31] 1947) stated that "chloromycetin has been ineffective in the treatment of mice infected with Japanese encephalitis and eggs infected with variola virus and influenza A virus. In another reference not quoted in the editorial (Smith and others, *J. Bact.* **55**:425 [March] 1948) chloromycetin was found to afford no protection against type A influenza, St. Louis encephalitis and fixed rabies virus infections in mice or in eggs.

I feel that it is important to call your attention to the errors in this editorial in order to avoid arousing false hopes on the value of chloromycetin in therapy of the virus diseases.

Albert Milzer, Ph.D.,
Michael Reese Hospital,
Chicago.

Bureau of Investigation

AUGUST WAS BAD MONTH FOR HORMONE CREAM PROMOTER

On Aug. 4, 1948, Daniel Platt pleaded guilty to a criminal information containing twelve counts, each of which represented an alleged violation of the Food, Drug and Cosmetic Act of 1938, based on representations made by the defendant in the promotion of a so-called bust-developing cream which he called "Formalon." A federal judge thereupon sentenced him to prison for a total of three years on the twelve counts, but suspended the sentence. A fine of $250 was then assessed on each of the twelve counts, or a total of $3,000. In addition, the court ordered the defendant Platt to be placed on probation for a period of three years, there being included a condition that he remove himself completely from any business relating directly or indirectly to the manufacture and sale of any drug or food product.

More recently Platt has been promoting another hormone cream breast-developer. This one he called "Manogin." A circular put out by the Manogin Company in the promotion of this product was so bad that it was felt necessary to comment on it in The Journal under the auspices of the Council on Pharmacy and Chemistry.[1]

The Post Office Department now announces that it has invoked a fraud order against the Manogin Company and its officers and agents as such. Aug. 20, 1948, was the effective date of such fraud order. The findings of fact on which the fraud order was issued brought out by way of expert testimony the uselessness of this preparation because of the small estrogenic content, even though used over long periods of time.

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[1] "Manogin"—Another "Bust Developer," J. A. M. A. **137**:950 (July 10) 1948.

Council on Medical Education and Hospitals

Approval of the Chicago Medical School

The Chicago Medical School, located at 710 South Wolcott Avenue, was inspected by representatives of the Council on Medical Education and Hospitals and the Association of American Medical Colleges in October 1948. This inspection revealed that the Chicago Medical School offers an educational program that meets the Council's standards for an approved medical school. Accordingly, at its meeting on Nov. 9, 1948, the Council voted to admit the Chicago Medical School to its list of approved medical schools. By this action all students in regular attendance at the school on graduation will be considered by the Council to be graduates of an approved medical school. This action does not apply to students who completed their formal academic education at the school prior to Nov. 9, 1948 and who are now serving the year of internship required by the school before the degree of Doctor of Medicine is awarded. Likewise, this action does not affect the status of physicians who graduated from the school prior to Nov. 9, 1948.

On the same day that the Council voted to admit the Chicago Medical School to its approved list, the school was elected to membership in the Association of American Medical Colleges.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I & II.* Various Centers, Feb., June and Sept. 1949. *Part II.* April, 1949. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2, Pa.

EXAMINING BOARDS IN SPECIALTIES

American Board of Internal Medicine: *Oral.* San Francisco, Feb. 8-10, 1949. Final date for filing application is Dec. 1, 1948. New York City, March 23-25. Final date for filing application is Jan. 2. Philadelphia, June 1-3. Final date for filing application is Jan. 2. *Written.* Oct. 17, 1949. Final date for filing application is May 1. Asst. Sec.-Treas., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 1949. Final date for filing application is Jan. 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn.

American Board of Ophthalmology: *Written.* Jan. 14. *Oral.* San Francisco, March 21-24; New York, June 11-15; St. Louis, Oct. 15-19; Boston, Dec. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopedic Surgery: *Part I.* Various Centers, April & May. Final date for filing application is Dec. 31. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Otolaryngology: New York, May 11-14; Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Boston, April. Final date for filing application is March 1. Sec., Dr. Robert A. Moore, 507 S. Euclid Ave., St. Louis 10, Mo.

American Board of Pediatrics: St. Louis, Feb. 18-20. Baltimore, April 22-24. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Rd., Rosemont, Pa.

American Board of Physical Medicine: Atlantic City, June 4-5. Final date for filing application is March 15. Sec., Dr. R. L. Bennett, Georgia Warm Springs Foundation, Warm Springs, Ga.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Psychiatry & Neurology: *Oral.* May. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March 1949. Final date for filing application is Dec. 1. Sec., Dr. J. S. Rodman 225 S. 15th St., Philadelphia.

American Board of Urology: Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 28-30, 1949. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

Alaska:* Juneau, March 1. Sec.-Treas., Dr. W. M. Whitehead, Box 140, Juneau.

California: *Oral.* Los Angeles, Nov. 20-21. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento 14.

Colorado:* Denver, Jan. 4-7. Final date for filing application is Dec. 18. Sec.-Treas., Dr. W. W. King, 831 Republic Bldg., Denver 2.

Delaware: *Examination.* Dover, Jan. 11-13. *Endorsement.* Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

Florida:* *Examination.* Jacksonville, Nov. 28-30. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O. San Francisco, Calif.

Hawaii: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 10-12. Dir., Bureau of Occupational Licenses, Miss Estella S. Mulliner, State House, Boise.

Indiana: *Examination.* Indianapolis, June 1949. Sec., Board of Medical Registration & Examination, Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

Iowa:* *Examination.* Des Moines, Dec. 6-8. *Endorsement.* Des Moines, Dec. 6. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 15-16. Sec., Board of Medical Registration & Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 13-15. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville 2.

Louisiana: *Examination.* New Orleans, Dec. Sec.-Treas., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12. *Homeopathic Examination.* Baton Rouge, subject to call. Sec., Dr. F. H. Hardenstein, 715 Pere Marquette Bldg., New Orleans.

Maryland: *Examination.* Baltimore, Dec. 14-17. *Endorsement.* At the discretion of the Board. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 7-8. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Mississippi: *Reciprocity.* Jackson, Dec. 6. Exec. Officer, State Board of Health, Dr. Felix J. Underwood, Jackson.

Nebraska:* *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Building, Lincoln 9.

New Hampshire: Concord, March 10. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New York: *Examination.* Various Centers, Feb. 1-4. Sec., Dr. J. L. Lochner, Jr., 23 S. Pearl St., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 17. Sec., Dr. Ivan M. Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-7. Act. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 13-15. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oregon:* *Examination.* Jan. 5-7. Final date for filing application is Dec. 22, 1948. *Endorsement.* Jan. 21-22. Final date for filing application is Jan. 3. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, Jan., 1949. Act. Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Puerto Rico: *Examination.* Santurce, March 1. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Endorsement.* Columbia, Dec. 6. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Pierre, Jan. 18-19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

Utah: *Examination.* Salt Lake City, July. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Vermont: *Examination.* Burlington, Feb. Sec., Dr. F. J. Lawliss, Richford.

Virgin Islands: *Examination.* Charlotte Amalie, Dec. 8-9. Comm., Dr. Christian R. Moorhead, Charlotte Amalie.

Virginia: *Examination.* Richmond, Dec. 3-4. *Endorsement.* Dec. 2. Sec., Dr. K. D. Graves, 30½ Franklin Road, Roanoke.

Washington:* Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

West Virginia: Charleston, Jan. 3-5. Sec., Public Health Council, Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

Wisconsin:* Madison, Jan. 11-13, 1949. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls, Wis.

Wyoming: *Examination.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Feb. 21-26. Sec.-Treas., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Dec. 21. Sec., Mr. Francis A. Roy, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 1-2. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

Connecticut: New Haven, Feb. 12. Exec. Asst., State Board of Healing Arts, Miss Mary G. Reynolds, 110 Whitney Ave., New Haven 10.

Michigan: *Examination.* Ann Arbor & Detroit, Jan. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Jan. 4-5, April, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

Oklahoma: Spring of 1949. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Dec. Sec., Basic Science Examining Committee, Dr. C. D. Byrne, Univ. of Oregon, Eugene.

SOUTH DAKOTA. *Examination.* Vermillion, Dec. 3-4. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

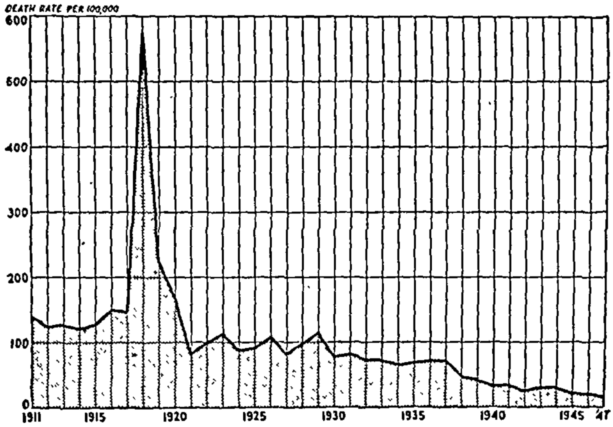
WASHINGTON: Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

WISCONSIN: *Examination.* Milwaukee, Dec. 4. Final date for filing application is Nov. 27. Sec., Prof. W. H. Barber, Scott & Watson Sts., Ripon.

Miscellany

INFLUENZA AND PNEUMONIA—THIRTY YEARS AFTER THE PANDEMIC

Thirty years ago a worldwide epidemic of influenza struck the Atlantic seaboard and swept through the country in a general westerly direction along the main lines of transportation. It is estimated that about 20,000,000 persons in the United States were attacked, of whom 550,000 died. The explosive character of the outbreak is apparent from the chart, based on experience among the industrial policyholders of the Metropolitan Life Insurance Company. In 1918 the adjusted death rate from influenza and pneumonia among these insured (ages 1 to 74 years) was 575 per 100,000, or more than four times the average for the preceding seven years. During the last three months of the year, when the pandemic was at its height, the death rate from these diseases, on an annual basis, was more than eleven times the rate for the preceding twelve month period.



Mortality from pneumonia and influenza, 1911 to 1947; Metropolitan Life Insurance Company, weekly premium-paying business, ages 1 to 74. Annual death rates have been adjusted for changes in age, sex and color composition of these policy holders.

In the years since the pandemic, however, phenomenal progress has been made in reducing the mortality from influenza and pneumonia. A new era was inaugurated in the early thirties, when specific serum treatment for many types of pneumonia was introduced. The death rate among these policy holders dropped from about 80 per 100,000 in 1930-1931 to about 70 per 100,000 in 1936-1937, during which period this type of therapy came increasingly into use. But just as the serum treatment was proving its worth in the battle against pneumonia, treatment with the sulfonamide drugs was introduced. In 1938, when both serum and the sulfonamide drugs were used, the death rate from pneumonia and influenza dropped sharply to 46.9 per 100,000 policy holders, a decrease of almost 35 per cent from the year before. The continued improvement in treatment with sulfonamide drugs and the introduction of penicillin brougnt still further success. By 1947 the rate reached the all-time low of 17.4 per 100,000; the rate for the current year will probably fall still lower. The efficacy of the newer methods of treatment is clearly evident from the fact that the improvement in mortality has been relatively three times as great in the past decade as in the preceding one.—*Statistical Bulletin,* Metropolitan Life Insurance Company, September 1948.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Pharmacists: Sale of Barbiturate Capsules Without Prescription; Liability for Suicide of Purchaser.—The plaintiff sued for damages for the death of her husband alleged to have been caused by the wrongful act of the defendant pharmacist. From a judgment in favor of the defendant the plaintiff appealed to the Supreme Court of South Carolina.

Section 5128-25 of the South Carolina statutes, which the defendant is charged with having violated, provides that any person, firm or corporation selling any of that general class of synthetic drugs, commonly known as barbiturates or their counterparts, except on the written prescription of a licensed physician, shall be deemed guilty of a misdemeanor. The plaintiff alleged that her husband, after having suffered from a cold and influenza, went to the defendant's pharmacy and asked for some drug which would "ease his nervousness and promote sleep." In response to this request the defendant sold him some barbiturate capsules in a box or container without any label showing the contents thereof and without first receiving a physician's prescription directing such sale. Thereafter, over a period of about a year, the defendant, at the request of the deceased, continued to sell him these capsules. The plaintiff then alleged that the barbiturate preparation in question was a habit-forming drug, that the deceased was not advised of its nature and that as a result of taking the capsules he became habituated to the use of the drug, in consequence of which he deteriorated mentally and physically. While under the influence of the drug, or while suffering from moroseness, caused by its habitual use, the deceased committed suicide by hanging. The plaintiff then concluded with the allegation that the capsules were sold to her husband in violation of the law and that his death by suicide was the proximate result of the wrongful acts of the defendant pharmacist in making such sales.

South Carolina law authorizes the representative of an estate to sue for damages for the wrongful death of a person if the wrongful act which caused such death would have entitled the deceased to maintain an action and recover damages in respect thereof during his lifetime. The defendant contended that the drug habit of the deceased was a direct consequence of his own voluntary act in taking the barbiturate capsules and not the result of the sale of the drug to him; that the consumption of the capsules was an act independent of and entirely distinct from the sale, depending entirely on the free will of the purchaser, and that the consumption and not the sale was the proximate cause of any resulting injury; that the deceased, by the exercise of ordinary care, might have escaped making himself a drug addict and by not doing so, he was the author of his own act. It was therefore urged that no cause of action accrued under the statute.

The court pointed out that the complaint set forth that the deceased, from time to time during a period of about a year, bought barbiturate capsules from the defendant and that at the end of said time he committed suicide by hanging himself. It is nowhere specifically alleged, said the court, that the deceased was incapable of consenting to any one or more of the sales of capsules or that the defendant had any knowledge that he was incapable or lacked volition in making such purchases. There is nothing to show that the deceased lacked self control or judgment or that he appeared to be under the influence of any drug when he applied for the capsules. We think, concluded the Supreme Court, that the inference is inescapable that the deceased knew the nature of the drug. He certainly must have known it after taking the capsules following his first purchase. He continued to make periodic purchases and the complaint alleges that he acquired the drug habit. But long before he became an addict he must have realized the effect the drug was having on him and if he had survived and brought this suit, he would not have been heard to say that he was not taking a "narcotic." His own contributory negligence would bar the action.

The defendant next argued that he could not be held liable on the theory of proximate cause. In every case of this character, the Supreme Court pointed out, the inquiry is: Was the injury a natural and probable consequence of the wrongful act, and ought it to have been foreseen in the light of the attendant circumstances? In this case, the court continued, the deceased took his own life by hanging. Can it be reasonably said that his tragic end was a natural and probable consequence of the sale to him of the barbiturate capsules, and should it have been foreseen in the normal course of events? It might be that defendant should reasonably have foreseen that the deceased would become a drug addict but not that the deceased would kill himself. All that can be said is that the deceased's unlawful act could have produced a condition of mind out of which the tragedy could have resulted. However, so many elements may enter into a suicide that it is impossible to say that it was the natural and probable consequence of the negligence. In order to reach such a conclusion, continued the Supreme Court, we would have to eliminate entirely all those elements of feeling, temperament, disposition, emotional disorders, background and lack of self control, which might of themselves have been sufficient to bring about the tragic result, even though the person committing suicide had not been under the influence of a drug. While it may be true that some suicides may result from the excessive use of drugs, such as barbiturates, yet, as a vast majority of the persons who use this form of drug do not commit suicide, it could not be said that he who sells the drug may reasonably contemplate that suicide will follow. The voluntary wilful act of suicide of an uninjured person, who knows the purpose and physical effect of his act, is generally held to be such a new and independent agency as does not come within and complete a line of causation from the injury to the death so as to render the one responsible for the injury civilly liable for death. We think, the Supreme Court concluded, it would be going entirely too far in this case to hold that the unlawful sale of the barbiturate capsules brought about a condition of suicidal mania as the natural and probable consequences of the sale, or that this result should have been reasonably foreseen by the defendant. Accordingly the judgment of the trial court holding that the defendant pharmacist was not liable for the death of the plaintiff's husband, was affirmed. *Scott v. Greenville Pharmacy, Inc., 48 S. E. (2d) 324 (S. C., 1948).*

Workmen's Compensation Acts: Employee's Refusal to Cooperate with Physician.—The claimant commenced a proceeding to obtain an award under the workmen's compensation act for compensation for the loss of his leg. From a ruling against him by the Industrial Commission, the claimant appealed to the Supreme Court of Appeals of Virginia.

The claimant sustained an injury to his shin at the site of an old fracture and reported to the company physician on Sept. 16, 1946. The physician removed some necrotic tissue, applied an elastic bandage and told the claimant to return for further attention in two days. When he did not return as directed, Dr. Healy, the physician, went to the tool room where the claimant worked and tried to explain to him how serious the trouble was, because of the fact that the ulcer was superimposed on an old area of discolored skin caused by the previous fracture. The claimant was very indefinite and would not promise to come back. He did return, however, on October 18, at which time his leg was about in the same condition—still with an infected abrasion. He was again instructed to come back in two days, which he did. At that time the bandage applied by the doctor two days before had been removed and there was a badly soiled piece of cloth and some sort of grease on the wound, which the doctor cleaned off with ninol and ether. The claimant was again instructed to return two days later, but the doctor did not see him again until December 5, about six weeks later. At that time his leg was a little worse and the doctor again sought to impress on him the importance of having it attended to. In turn, the claimant tried to impress on the doctor how well he himself had been able to take care of other ulcers he had had on his legs, stating that he had had a similar accident in May and had cured it himself. He did not return to Dr. Healy for treatment after December 5. The leg was finally amputated by another physician about four months later.

Dr. Healy testified that he made every effort to induce the claimant to come to see him regularly but the claimant failed to do so. In addition to Dr. Healy's efforts, the shop foreman, at the request of the nurse in charge, told the claimant to go to the first aid room, but got no definite promise from him. Dr. Healy and the nurse called the claimant's immediate boss to see whether he could get him to come for treatment. The boss saw the claimant several times and told him to go. He testified that the claimant went some place, but whether he went to the first aid room he did not know. Torbert, a machinist, who was safety marshal and worked right at the tool room and who was a friend of the claimant, testified that on different occasions he was asked by the nurse, as a favor to her and to the claimant, to request the claimant to report for treatment. He did so, but the claimant did not go. He saw the claimant five different times. He and his father, who was a wholesale druggist, talked to the claimant several times about his leg. It seemed to be healing from the top, and the claimant was pulling the skin up from time to time to try to get healing from the bottom first. He asked Torbert whether he could get him a mixture of mutton tallow and turpentine. Torbert said that the claimant was trying to get cured all by himself and told Torbert he was not going to see the doctor and the nurse any more, as he could do more for his leg than they could.

The claimant did not contradict any of this evidence. His testimony was that he went to the first aid room as much as he could, which was eight or ten times, and that the reason he did not go oftener was because, as he expressed it, his job was at stake. On the other hand, there was evidence that permission to go for treatment could have been had at any time just for the asking. Furthermore, his immediate superiors, the doctor and the nurse, as well as his friend and co-worker, repeatedly urged him to go for treatment. The claimant did not testify that he ever made a specific request to go for treatment which was refused. Finally, Dr. Healy testified that if the claimant had come to him and taken treatments regularly he felt positive that his trouble would have been cured and that no amputation would have been necessary. There was no evidence of any kind to the contrary.

The Virginia workmen's compensation act provides that for a period not exceeding sixty days after an accident the employer shall furnish, free of charge, to the injured employee, such necessary medical attention as the nature of the accident may require, and the employee shall accept it, and during the remainder of disability, the employer may furnish, free of charge, an attending physician whom the employee shall accept, with certain exceptions and additions not involved in the present case. The law then goes on to provide, "The refusal of the employee to accept such service when provided by the employer shall bar said employee from further compensation until such refusal ceases, and no compensation shall at any time be paid for the period of suspension unless, in the opinion of the industrial commission, the circumstances justified the refusal, in which case the industrial commission may order a change in the medical or hospital service."

The questions presented by this appeal, said the Supreme Court of Appeals, are whether the employer furnished adequate medical services and attention and whether the claimant refused to accept them to such an extent as to bar him from compensation. On the basis of the evidence herein reviewed, the court was of the opinion that the claimant refused the medical attention offered him and urged on him, without any excuse for doing so other than his notion that he could take care of himself. This was not a legal excuse, said the court. The duty of the employee to accept such necessary medical attention as the nature of the accident may require is made compulsory by the statute. His refusal to do so, by like mandate of the statute, bars him from compensation until such refusal ceases. To have that consequence his refusal must be unreasonable and without just cause. The Industrial Commission found that "the preponderance of the evidence shows that all the complications which led to the amputation were due to his lack of cooperation and inexcusable refusal to receive the medical attention tendered him." This finding, concluded the Supreme Court of Appeals, is amply supported by the evidence. Accordingly the judgment of the Industrial Commission was affirmed and the employee was denied any compensation because of his failure to cooperate with the attending physician. *Stump v. Norfolk Shipbuilding & Dry Dock Corporation, 48 S. E. (2d) 209 (Va., 1948).*

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

36:1-160 (July) 1948

New Contributions to Study of Intracavity Potential in Cases of Right Bundle Branch Block in Human Heart. D. Sodi-Pallares, P. Thomsen and J. Soberon.—p. 1.

Effect of Dicumarol on Heart in Experimental Acute Coronary Occlusion. H. L. Blumgart, A. S. Freedberg, P. M. Zoll and others.—p. 13.

*Incomplete Division of Atrioventricular Canal with Patent Interatrial Foramen Primum (Persistent Common Atrioventricular Ostium): Report of Five Cases and Review of Literature. H. M. Rogers and J. E. Edwards.—p. 28.

Interpretation of Electrocardiogram in Dextrocardia with Situs Inversus. E. M. Shepard and H. J. Stewart.—p. 55.

Study of Alleged Intercoronary Reflexes Following Coronary Occlusion. D. F. Opdyke and E. E. Selkurt.—p. 73.

*First Ten Years of Rheumatic Infection in Childhood. Rachel Ash. —p. 89.

Axis Deviation in Human Bundle Branch Block. A. M. Jones and H. Feil.—p. 98.

Multiple Channel Electronic Stethoscope for Teaching and Demonstration. J. S. Butterworth and C. A. Poindexter.—p. 112.

Diagnostic Value of Pattern T_1 Lower Than T_3 ($T_1 < T_3$) Compared with Information Yielded by Multiple Chest Leads in Myocardial Infarction. W. Dressler and H. Roesler.—p. 115.

Further Studies on Effect of Papaverine on Cardiotoxic Lesions of Digitalis in Dog. F. A. Kyser and Ruth Trump.—p. 133.

False Abnormality of Precordial Electrocardiograms Due to Effect of Changes of Potential at Remote Electrode. E. Hull, H. D. N. Tucker and J. O. Weilbacher.—p. 135.

Simple Method of Determining Abnormalities of Q-T Interval. E. Goldberger.—p. 141.

Division of Atrioventricular Canal.—Rogers and Edwards report 5 cases of congenital cardiac disease termed incomplete division of the atrioventricular canal with patent interatrial foramen primum (persistent common atrioventricular ostium) and review the pathologic and clinical features in an additional 50 cases reported in the literature. In the entire group of 55 cases, the median age of the patients at the time of death was 10 months. More than half of the patients died before they were 1 year of age. Only 5 of the patients lived beyond the age of 30 years. The lesion under consideration acts essentially as does a simple interatrial septal defect. Enlargement of the right side of the heart and widening of pulmonary artery orifice are common secondary lesions. Cyanosis may be present at birth, but is usually acquired. When this manifestation develops, it is a sign of failure of the right side of the heart, pulmonary disease, or both. Cardiac murmurs, usually systolic, are frequently observed. Mongolism is a relatively common associated finding.

Rheumatic Infection in Childhood.—At the Children's Hospital of Philadelphia a register has been kept of all patients treated for rheumatic infection since 1922. In 1946 and 1947, a survey was made of all patients whose primary manifestation had occurred during the years 1923 to 1937, inclusive. Although many had been followed for much longer periods, the discussion is limited to the first ten years following the initial illness. At the termination of the initial attack 59.2 per cent of 547 children who were followed for ten years showed evidence of rheumatic heart disease. Of 219 patients with no clinical evidence of heart disease at termination of their first attack, 76.7 per cent still showed no evidence of heart disease ten years after onset. Only 5 per cent of this group with potential heart disease at onset had died of rheumatic infection or bacterial endocarditis. Of 318 patients with rheumatic heart disease at onset, 30 (9.4 per cent) showed disappearance of signs of cardiac involvement. Of this group with rheumatic heart disease at onset, 42.1 per cent had died of rheumatic infection or bacterial endocarditis. The most significant prognostic factor, so far as the initial illness is concerned, is related to the presence or absence of signs of cardiac damage. Chorea at onset is relatively benign, because it is less likely to be associated with carditis than is polyarthritis or other types of rheumatic infection. Ten years after onset, 60.3 per cent of these rheumatic patients were leading a normal existence. Those without clinical evidence of heart disease at the termination of the initial attack accounted for the majority of those presenting no functional incapacity. Twenty-four and four-tenths per cent of the total group had died of rheumatic infection, the predominant number of deaths occurring among those in whom a diagnosis of rheumatic heart disease had been made after recovery from the first attack. Death had occurred in only 5 per cent of the group in whom an original diagnosis of potential heart disease had been made, in comparison with a death rate of 42 per cent among those given a diagnosis of rheumatic heart disease at onset.

American J. Obstetrics and Gynecology, St. Louis

56:1-204 (July) 1948

Effectiveness of Various Diuretic Agents in Causing Sodium Excretion in Pregnant Women. W. E. Brown and J. T. Bradbury.—p. 1.

Mesonephric Remnants in Cervix. J. W. Huffman.—p. 23.

Abdominal Colpocystopexy for Complete Prolapse of Vagina and Bladder; Rectus Suspension Principle of Crossed-Suspender Support. P. F. Fletcher.—p. 41.

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Review of 300 Anterior and Posterior Colporrhaphies with Plea for Anatomic Correction of These Traumatic Hernias Earlier and with Presentation of Author's Procedures of Repair. W. O. Johnson. —p. 100.

Changing Concepts in Cervical Biopsy. K. E. Cox, V. B. Buhler and W. C. Mixson.—p. 112.

Vaginitis Emphysematosa. H. L. Gardner.—p. 123.

Puerperal Inversion of Uterus. H. Henderson and R. W. Alles.—p. 133.

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Prolapse of Vagina Following Abdominal Hysterectomy. D. A. Bickel. —p. 152.

Treatment of Urinary Tract Infections with Sulfathalidine (Phthalysulfathiazole). C. G. Johnson, L. H. Lorenzen and Ruth Y. Mayne. —p. 160.

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Amebic Vaginitis. B. Bernard Weinstein and J. C. Weed.—p. 180.

Treatment of Trichomonas Vaginalis with Tyrothricin. C. G. Johnson, J. W. Douglas and Ruth Y. Mayne.—p. 184.

Krukenberg Tumor with Osteoplastic Metastases. J. H. Zeigerman. —p. 187.

*Massive Gastric Hemorrhage in Pregnancy. J. Carangelo and T. D. Efstation.—p. 191.

Acute Anterior Poliomyelitis in Pregnancy.—*Taylor and Simmons* found that during the 1946 epidemic of poliomyelitis in Colorado the pregnant woman was twice as vulnerable to the virus disease as the nonpregnant woman of the same age group. Women in all months of pregnancy were equally susceptible to poliomyelitis. During the first two trimesters the prognosis for recovery is excellent. Poliomyelitis acquired during the last trimester carries a serious prognosis with respect to survival of the mother or escape from severe permanent paralysis. Estrogen and progesterone may be protective to a victim of poliomyelitis early in pregnancy. This is not true in the last trimester. The virus does not pass the placental barrier. All children born of mothers infected during this epidemic have been free from congenital disease. Management of pregnancy accompanied by acute poliomyelitis in the last trimester of pregnancy is a challenging problem. In the acutely ill patients, cesarean section seems unreasonable. Poliomyelitis had no ill effects on the progress of labor except that it necessitated an occasional forceps operation.

Massive Gastric Hemorrhage in Pregnancy.—*Carangelo* and his associates present the histories of 4 women who present the unusual complication of massive hemorrhage during pregnancy at term. Three presented an eclamptic syndrome of hypertension, edema, convulsions, oliguria and albuminuria. All 4 had severe projectile vomiting of blood, followed by marked decrease of blood pressure. In all, the onset of labor occurred twenty-four to twenty-eight hours following the onset of projectile hematemesis. Three of the patients were delivered of stillborn infants in whom the heart tones were not audible, following the onset of hematemesis. In 1 case, in which the mother survived, the infant was premature and viable. Pathologic study of case 1 revealed no specific source of hemorrhage in the esophagus or stomach in the form of varices. Superficial ulceration of the mucosa of the stomach and esophagus was noted. This may have been a source of bleeding, but it was not thought that it would have produced the amount of hematemesis noted clinically. The elevated temperature was probably due to the severe chronic endometritis in which there were necrosis and masses of bacteria in the endometrium. Together with this infection she had acute pyelonephritis bilaterally and an acute splenic tumor. This infection may have been the underlying cause of her massive hematemesis and the death of the fetus.

American Journal of Ophthalmology, Cincinnati

31:773-914 (July) 1948

Dacryocystitis of Infancy. J. V. Cassady.—p. 773.
Anatomic Factors in Etiology of Heterotropia. R. G. Scobee.—p. 781.
Review of 100 Cases of Retinal Detachment. Ruth Appleby and D. K. Pischel.—p. 796.
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Agnostic Alexia Without Agraphia Following Trauma. H. H. Joy.—p. 811.
Widening of Angioscotoma in Alarm Reaction. M. R. Cholst.—p. 821.
*Character of Nystagmus Induced by Amytal in Chronic Alcoholics. M. B. Bender and C. A. Brown.—p. 825.
Diathermy Treatment of Angioma of Retina. P. M. Lewis.—p. 829.
Glaucoma Associated with Subluxation of Lens in Several Members of Family. J. P. Harshman.—p. 833.
Ocular Effect of Several Irritant Drugs Applied Directly to Conjunctiva. J. J. Estable.—p. 837.
Some Aspects of Studying Binocular Vision. K. C. Swan.—p. 845.
Further Experiences with Integrated Eyes and Vitallium Implants. W. L. Hughes.—p. 854.

Nystagmus Induced by "Amytal" in Chronic Alcoholism.—While studying the effect of barbiturates on eye movements Bender and Brown observed that in chronic alcoholic addicts intravenous injection of "amytal sodium" (sodium isoamylethylbarbiturate) produced fine, shimmering nystagmus instead of the coarse and slow nystagmoid movement which is generally seen in barbiturate intoxication of persons not addicted to alcohol. Comparative tests were made on 15 alcoholic addicts and 15 controls not addicted to alcohol. A 5 per cent solution of "amytal sodium" was injected into the antecubital vein at a rate not exceeding 0.1 Gm. or 2 cc. per minute. The total dose was never more than 0.5 Gm. or 10 cc. During these tests the patients were instructed to fix their gaze on an object away from the central visual axis. In the control subjects injection of "amytal sodium" generally produced ocular responses of two types: (1) wide, slow irregular oscillations in which the eye drifted slowly toward the midline from a point of fixation and returned to the original position with a flick, and (2) coarse, slow rhythmic nystagmus. All patients addicted to alcohol showed fine shimmering nystagmus. In 1 patient the type of nystagmus helped the discovery that the patient had been an alcoholic addict, which he had denied at first. It appears that if alcohol is imbibed over a long period, it alters the function of the nervous system. The fine rapid nystagmus is found even months after the patient has stopped drinking. This suggests that alcohol produces a more or less permanent change in nervous system function.

Amercian Journal of Public Health, New York

38:915-1060 (July) 1948. Partial Index

What's Happening to Malaria in the U. S. A. J. M. Andrews.—p. 931.
Some Labor Union Enterprises in Public Health Economics. B. A. Kogan.—p. 943.
International Population and Vital Statistics. F. E. Linder.—p. 951.
General Atmospheric Pollution: Air Pollution Control Program in Cleveland. H. G. Dyktor.—p. 957.
Id.: Some Work in Pittsburgh Air Pollution Problems. S. B. Ely.—p. 960.
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Id.: New York City's Atmospheric Pollution Control Problems. A. C. Stern.—p. 966.
Medical Attendance During Terminal Illness. Marta Fraenkel.—p. 970.
Theoretical Considerations Concerning Caries Control. L. S. Fosdick.—p. 977.
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Increasing Scope of School Sanitation Service in Local Department of Health Programs. S. D. Sturkie.—p. 997.

Annals of Western Medicine and Surgery, Los Angeles

2:241-288 (June) 1948. Partial Index

Corneal Lens—New Type of Plastic Contact Lens. Preliminary Report. M. W. Nugent.—p. 241.
*Streptomycin Toxicity. J. D. Davis, C. W. Anderson and A. E. Landy.—p. 245.
Vagotomy. Evaluation of Experimental Work, Research, Clinical Application and Results of Vagotomy in Various Clinics, with Statistics on 53 Vagotomies Performed at Los Angeles County General Hospital. A. M. Hansen.—p. 249.

Streptomycin Toxicity.—Davis and his co-workers report 117 patients who received streptomycin for some form of tuberculosis at the thoracic diseases service of the Birmingham Veterans Administration Hospital from January 1947 to January 1948. Streptomycin is considered sufficiently toxic to warrant recommending that it be administered only during hospitalization. Neurotoxic, anaphylactic, renal and general toxic reactions have been noted. Treatment was abandoned in 12 of the 117 patients because of severe toxic reaction after twelve to one hundred and five days of therapy. Of 105 patients who received 2 Gm. streptomycin for sixty to one hundred and twenty days 97 per cent manifested damage in the vestibular portion of the eighth cranial nerve, in which the neurotoxic selection by streptomycin is noted especially. In general, the onset of damage to the vestibular apparatus depends on the total amount of streptomycin received. Toxic effects on the cochlear portion of the eighth cranial nerve were relatively minor. Loss of hearing, chiefly in the high audiometric range, occurred in only 25 per cent of the patients. Loss of hearing in the audible range was noted in less than 3 per cent of the patients. More than 4 per cent eosinophils were noted in 78 of the 117 patients. In 18 correlation between good results of therapy and a high eosinophilia was noted, but 15 patients also obtained good results without eosinophilia, and in 8 patients with high eosinophilia poor results were observed. Leukopenia developed in 2 patients at the end of the sixty day regimen of treatment. A definite relation exists between the severity of toxic reactions and high levels of streptomycin in the blood.

Archives of Dermatology and Syphilology, Chicago

57:281-402 (March) 1948

Folliculitis Ulerythematosa Reticulata. G. M. MacKee and A. C. Cipollaro.—p. 281.
*Recurrent Lupus Vulgaris Following Surgical Excision and Replacement Skin Graft. S. S. Robinson and S. Tasker.—p. 293.
"Repeat" Cultures in Dermatophytosis. F. D. Weidman and F. A. Glass.—p. 300.
Studies on Sensitivity to Plasticizers: Ortho-Nitrobiphenyl, N-Isopropyl Benzene Sulfonamide and N-Isopropyl Benzene Sulfonamide and N-Isopropyl Ortho and Para Toluene Sulfonamide. Helen R. Gottschalk and R. S. Weiss.—p. 304.
*Effects of Topical Applications of Diphenhydramine Hydrochloride (Benadryl). T. H. McGavack, P. Schulman, R. Schutzer and H. Elias.—p. 308.
Herpes Zoster Associated with Monocytic Leukemia. S. M. Bluefarb.—p. 319.
Distrophia Unguium Mediana Canaliformis. M. M. Robinson and F. D. Weidman.—p. 328.
Myoepithelial Sweat Gland Tumor, Myoepithelioma: Report of 3 Cases with Review of Literature. W. F. Lever.—p. 332.
Dermatologic Evaluation of Yeast, Tyrotyricin, Chlorophyll and Nitrofurazone. H. A. Johnson.—p. 348.
Dermatitis of Hands. B. H. Winston.—p. 357.
Serologic Conflict: Study of Serodiagnostic Discrepancies. Bettina B. Carter.—p. 368.
Biologic Basis of Psychosomatic Disease of Skin. M. J. Brunner.—p. 374.
Leukoderma Acquisitum Centrifugum. M. Leider and T. M. Cohen.—p. 380.
Chemistry of Palmar Sweat. W. C. Lobitz and H. L. Mason.—p. 387.

Recurrence of Lupus After Skin Grafting.—Robinson and Tasker present the case of a woman, aged 50, who had had a lupus vulgaris lesion on the right cheek; the lesion had been excised and the area covered by a free thick skin graft. Although at first an excellent cosmetic result was obtained, about a year later there were signs of recurrence of the disease in the skin graft and scar. A review of the medical literature shows that despite the favorable reports from European investigators, frequent postoperative recurrences of the disease are observed in the United States. Since lupus vulgaris is frequently hematogenous in origin, the authors advise that if local surgical treatment is employed it should be combined with treatment for systemic tuberculosis.

Topical Application of Diphenhydramine.—According to McGavack and his associates diphenhydramine hydrochloride ("benadryl") has a powerful antihistaminic effect. The frequency of the side effects of the drug when given in adequate amounts by mouth has led to the investigation of its topical use for diseases in which cutaneous manifestations of a probably allergic nature are present. Topical application of 2 and 5 per cent concentrations of diphenhydramine in ointment bases in 63 patients reduced or completely destroyed the response of the skin to intradermally applied histamine. "Carbowax 1500" monostearate, an oil in water emulsion, appeared to be the best of the three bases employed. Seventy-four patients with itching dermatoses were treated with ointments containing diphenhydramine. Forty-four obtained complete relief from the itching, while an additional 18 were improved. Six patients experienced some discomfort from the application of the ointment, particularly when a 5 per cent concentration was used. In 4 of these patients this lasted not more than five minutes. Of the other 2, it was due to the base employed in one and to an aggravation of a weeping eczematous disease in the other. No systemic side reactions were observed in any of the 137 patients who were subjects of this study.

Archives of Internal Medicine, Chicago

81:115-248 (Feb.) 1948

Renal Arteriovenous Anastomoses in Rabbits, Dogs and Human Subjects. B. Simkin, H. C. Bergman, H. Silver and others.—p. 115.
*Thrombosis as Complication of Internal Diseases. S. Kallner.—p. 126.
*Hypoprothrombinemia: Effect of Transfusions of Blood Fortified by Administration of Vitamin K to Donors. H. R. Butt, T. B. Magath and T. H. Seldon.—p. 131.
Intravenous Administration of Mercurial Diuretics in Man: Immediate Effect on Electrocardiogram. L. Wolff and E. S. Sagall.—p. 137.
Meningococcic Bacteremia. W. B. Daniels.—p. 145.
Regulation of Pulmonary Arterial Blood Pressure. G. Liljestrand. p. 162.
*Carcinoma of Pancreas: Diagnostic Criteria. G. F. Dashiell and W. L. Palmer.—p. 173.
Association of Spontaneous Hypoglycemia with Hypocalcemia and Electro-Cerebral Dysfunction. M. Fabrykant and B. L. Pacella. p. 184.
Dynamics of Action of Penicillin: Time-Dose Relationship in Human Streptococcic Disease. E. Jawetz.—p. 203.
Cardiovascular Diseases: Review of Significant Publications from January 1944 to June 1947. O. Paul, with the editorial assistance of E. F. Bland and P. D. White.—p. 209.

Thrombosis and Internal Diseases.—Kallner emphasizes that in patients with pneumonia the temperature sometimes does not return to normal but remains subfebrile. The possibility of thrombosis must be considered. The appearance of blood-streaked sputum in these cases is probably a sign of pulmonary embolism pointing to the existence of thrombosis. In 3 such cases anticoagulant therapy with heparin and "dicumarol" produced rapid recovery. Heparin has been used in an instance of anuria caused by a hemolytic reaction after blood transfusion. Two hours after heparin was given the anuria cleared up. Heparin has also been successfully used together with ephedrine in cases of fibrinous bronchitis.

Hypoprothrombinemia: Administration of Vitamin K to Blood Donors.—This study by Butt and his associates was undertaken to repeat Kinsey's observation in cases of severe hepatitis with hemorrhagic manifestations which could not be controlled by administration of vitamin K or transfusion of whole blood. In attempting to control the hemorrhage, Kinsey administered 18 mg. of vitamin K intramuscularly to donors twenty-four hours prior to withdrawal of blood for transfusion. He reported that such blood, when administered to bleeding patients who did not respond to the usually effective measures, caused cessation of hemorrhage and increase in the level of prothrombin in four hours. Butt and his associates report observations on 3 patients in whom severe hepatic damage was accompanied by deficiency of prothrombin in the circulating blood. They found that prothrombin deficiency cannot be corrected by administration of vitamin K or of whole blood. It also has been shown that administration of so-called fortified blood is not effective in altering the prothrombin level in these patients. Not only was fortified blood of no value in correcting prothrombin deficiency in these patients with severe intrahepatic disease but, likewise, it was ineffectual in the correction of the deficiency in external biliary obstruction, in spite of the fact that the latter condition was quickly remedied by the administration of vitamin K alone.

Carcinoma of Pancreas.—Dashiell and Palmer analyze 90 cases of carcinoma of the pancreas. Pain is an extremely important and early symptom. It was present in 75 of the 90 patients, in all of the 50 in whom there was no jaundice and in 45 of the 60 in whom jaundice was present. The pain, although variable in character, was typically dull and persistent and located high in the abdomen, but occasionally it was referred to the lower part of the abdomen. It was primary in the back in 14 cases and radiated to the back in 22 cases. Jaundice was present in 60 of the 90 patients. In 35 of those with jaundice, the gallbladder could be palpated preoperatively. An epigastric mass was noted in about one third of the patients. Progressive and rapid loss of weight is extremely significant; it occurred in at least four fifths of their cases. Persistent anorexia is of similar importance. Persistent unexplained diarrhea, particularly steatorrhea occurring with abdominal pain, is suggestive of pancreatic neoplasm. Glycosuria, usually inconstant, occurred in 24 of the cases; a diabetic type of dextrose tolerance curve was found in 18 of 21 patients tested. The diagnostic value of this procedure may be greater than has been realized in the past. Roentgen signs of diagnostic importance were noted in nearly half of the series. Greater attention should be paid to the possibilities of roentgen examination as a diagnostic procedure. While there are no pathognomonic criteria for pancreatic neoplasm and the clinical picture is somewhat variable, the essential features are so definite and the procedures mentioned so helpful that the diagnosis should be made earlier and more accurately than at present.

Archives of Otolaryngology, Chicago

47:239-378 (March) 1948

Audiometric Studies of Residual Hearing of Pupils of Rio de Janeiro National Institute for the Deaf: I. Auditory Acuity of Deaf Children. A. P. Lacerda and A. E. Vervloet.—p. 239.
Id.: II. Study of Progress of Impairment of Children's Hearing. A. P. Lacerda and A. E. Vervloet.—p. 264.
Bone-Dust-Free Lempert Fenestra Nov-Ovalis: A New Evolutionary Development of Surgical Treatment of Clinical Otosclerosis. J. Lempert.—p. 280.
*Newer Concept of Management of Otogenic Infection. M. B. Hayes and C. F. Hall.—p. 289.
Loss of Speech Due to Meningitic Deafness. C. E. Kenney.—p. 303.
Peroral Endoscopy: A Review of the Literature for 1946. L. C. Clerf, J. T. Spencer and C. D. Riggs.—p. 337.

New Management of Otogenic Infection.—Hays and Hall show that in the temperate zone otogenic infections are essentially of two types, a winter type, infections due to gram-positive organisms, and a summer type, infections due to gram-negative organisms. The type caused by gram-positive organisms can be treated adequately with the sulfonamide drugs and the antibiotics. The type characterized by gram-negative organisms does not respond to these drugs. One hundred cases were studied clinically and bacteriologically (160 cultures). It was found that the resistant etiologic agent in chronic suppurative otitis media and external otitis was predominantly Pseudomonas aeruginosa (Bacillus pyocyaneus). In a carefully controlled bacteriologic and clinical study of 100 cases of otitic infections, a new chemical agent, dibromosalicylaldehyde, has been found more satisfactory than other agents suggested thus far. Owing to the unavailability of streptomycin, no opportunity has been afforded to study the efficacy of this antibiotic in these types of aural infections. Dibromosalicylaldehyde ("dalyde") is a readily available, inexpensive chemical agent, which is effective against both bacteria and fungi. It can be utilized in powder, ointment and solution. Seventy-one patients with external otitis were relieved of symptoms within twenty-four hours. In 30 the infection resolved in one week or less, and the rest required two to four weeks' treatment. Although follow-up was inadequate, only 1 patient returned with a recurrence; this one had seborrheic dermatitis. Of 28 patients who had otitis media, 12 had dry ears in two to six weeks; the remainder required up to two and a half months' treatment. Only in 8 did the ears fail to become dry.

Bulletin of Johns Hopkins Hospital, Baltimore

83:1-118 (July) 1948

*Virus, Nerve Cell and Paralysis: Study of Experimental Poliomyelitis in Spinal Cord. D. Bodian.—p. 1.

Virus, Nerve Cell and Paralysis.—Bodian says that published observations on the histopathologic changes in the spinal cord in poliomyelitis are numerous but the complexity of the problems of pathogenesis has resulted in contradictory interpretations and has left many points unsettled. It was felt that some of the important points remaining at issue perhaps could be investigated more satisfactorily by means of an approach which attempts to correlate pathologic processes in chronologic sequence, with changes in level of virus activity on the one hand and changes in clinical function on the other. It was felt that such an approach requires at least approximate quantitative data at all three levels of observation, and could therefore be essayed only in the experimental animal. In this extensive report Bodian gives a description of the course of a poliomyelitic infection in the spinal cords of rhesus monkeys killed at intervals from the preparalytic period to the chronic stage.

Canadian Medical Association Journal, Montreal

59:1-76 (July) 1948

*Treatment of Early Syphilis by Five-Week Penicillin-Mapharsen-Bismuth Schedule. A. Marin, F. L. Boulais, A. Lambert and others. —p. 1.
Problem of Older Age Hernia. H. I. Jackes, H. R. Robertson and W. H. Sutherland.—p. 7.
Psychology of Reconstructive Surgery. J. H. Couch.—p. 10.
Value of Splenectomy in Hematologic Disorders. C. W. Holland. —p. 13.
Estimation of Hearing Losses for Purposes of Adjudication of Disability Claims. A. E. Lundon.—p. 18.
*Rutin in Hematuria of Congenital Polycystic Disease of Kidneys. H. O. Foucar.—p. 21.
Differential Diagnosis of Chronic Extremity Symptoms. J. C. Luke. —p. 23.
Medical Shock and Death Following Neoarsphenamine Therapy for Syphilis. B. Kanee and G. R. F. Elliot.—p. 28.
Virus Infections of Central Nervous System. A. J. Rhodes.—p. 32.
Modern Approach to Psychoanalysis. N. Viner.—p. 36.
Vaginal Smear Technic for Diagnosis of Cancer in Female Genital Tract. J. D. Hamilton and M. O. Klotz.—p. 42.
Oral Administration of Penicillin. H. Starkey and J. H. Dixon.—p. 47.
*Sulpha Granuloma—New Pathologic Entity. T. H. Williams.—p. 50.
Results of Surgical Treatment of Coronary Artery Disease. C. B. Ripstein.—p. 52.
Ocular Manifestations of Myasthenia Gravis. B. Teichman and K. C. Greer.—p. 55.
Assessment of Results of Vagotomy: Based upon Personal Experience of 66 Cases. L. H. Appleby.—p. 58.

Five Week Penicillin-Oxophenarsine-Bismuth Schedule in Early Syphilis.—The treatment described by Marin and his co-workers consists in the administration of penicillin, oxophenarsine hydrochloride and bismuth compound over a period of five weeks, necessitating hospitalization for the first week. During the first week, the three drugs are given simultaneously. During the four following weeks only oxophenarsine and bismuth compound are given. Sodium penicillin in aqueous solution is administered intramuscularly every three hours, in sixty injections of 40,000 units each. A total dose of 2,400,000 units is thus received in seven and one-half days. Oxophenarsine is given at the rate of four injections of 60 mg. each, every week, for five weeks, the total dose being 1,200 mg. in twenty injections. Bismuth compound, in oil solution, containing 0.07 Gm. of metallic bismuth per cubic centimeter, is administered at the rate of 1 cc. twice a week for five weeks. In May 1945, this schedule of treatment was adopted for cases of early syphilis. Up to November 1947, 230 patients were placed under treatment. Of these, 222 received complete treatment. A total of 201 cases have been kept for final analysis. The 29 others were eliminated because of previous treatment, late syphilis, doubtful diagnosis or delinquency from treatment. There was one fatality due to encephalopathy (0.4 per cent); there were no other severe toxic reactions. Satisfactory progress was obtained in 100 per cent of 36 cases of seronegative primary syphilis, in 90 per cent of 55 cases of seropositive primary syphilis and in 86 per cent of 94 cases of secondary syphilis. The over-all results show 90 per cent satisfactory progress and 4.5 per cent definite treatment failures, with the other 6 per cent pending.

Rutin in Hematuria.—Foucar reports a woman, aged 44, with bilateral congenital polycystic kidneys, gross hematuria, definite impairment of renal function, hypertension and mild secondary anemia. As nothing could be done to improve the underlying lesion, the author decided to try rutin. Twenty milligrams of rutin to which 50 mg. of ascorbic acid had been added was given three times a day with gratifying results. The bleeding stopped promptly. There has not been gross hematuria in six months. The patient feels better than at any time since 1945 and is working steadily. She is also relieved emotionally because of the supression of the visible signs of her disability. Rutin has been used in vascular disturbances particularly of the eyes and may lessen the danger of vascular accidents in hypertension. It may find a place in the treatment of shock, ascites, edema and even some of the eczemas.

Sulfonamide Granuloma.—Williams reports the case of a nurse who noted a tender swelling in her left breast. When application of heat and fomentation failed to resolve the swelling, the lesion was incised and a small bit of tissue removed. At this time sulfanilamide powder was dusted into the wound. Subsequently, the wound became tender and exuded a little serous discharge, healed and again broke down with a small sinus opening. The area was excised with the diagnosis of abscess of the breast. Tissue section showed chronic inflammatory reaction with numerous small areas of granuloma. Repeated subsequent sinus formation required additional incisions. Whereas granulomatous appearance was not found at the original examination of the tissue, such an appearance was found at all three specimens of tissue removed after sulfonamide powder was introduced into the tissues. Reviewing diagnoses for the past year, the author found a dozen reports of reamputations or reoperations in which pain and/or discharge from a surgical scar had been present. In all of the group definite crystalline inclusions were seen in foreign body giant cells. Records of the original operation usually indicated that sulfonamide powder had been dusted into the incision before closure. While the dusting of sulfonamide powder into the wounds at operation may not always produce granulomatous tissue reaction, it remains as unabsorbed foreign material in an appreciable number of cases and provokes a granulomatous tissue reaction.

Endocrinology, Springfield, Ill.

42:339-426 (May) 1948

Grafted Mouse Ovaries and Their Adrenal Cortical Function. R. T. Hill.—p. 339.
Cholesterol Studies of Adrenals and Plasma in Partially Hepatectomized and Partially Nephrectomized Rats After Injection of HN_3. S. Ludewig and A. Chanutin.—p. 352.
Increased Protein Catabolism in Thyroidectomized Rats: Rates of Urine Urea Excretion and Serum Urea. E. C. Persike.—p. 356.
Increased Protein Catabolism in Thyroidectomized Rats: Anatomic Changes. E. C. Persike.—p. 363.
Response of Human Fetal Reproductive System to Administration of Diethylstilbestrol and Testosterone Propionate During Early Pregnancy. M. E. Davis and Edith L. Potter.—p. 370.
Assay of Adrenocorticotrophic Hormone by Adrenal Ascorbic Acid-Depletion Method. M. A. Sayers and L. A. Woodbury.—p. 379.
Lymphopenia Following Electrically Induced Convulsions in Male Psychotic Patients. W. P. Mikkelsen and T. T. Hutchens.—p. 394.
Effect of Inanition on Anterior Pituitary-Adrenocortical Interrelationship in Guinea Pig. S. A. D'Angelo, A. S. Gordon and H. A. Charipper. —p. 399.
Extra-Renal Action of Desoxycorticosterone: Survival and Water Intoxication Studies. J. H. Birnie, W. J. Eversole and R. Gaunt.—p. 412.

Iowa State Medical Society Journal, Des Moines

38:231-278 (June) 1948

Endometriosis. R. S. Cron.—p. 231.
Management of Peritoneal Soiling Complicating Surgery of Abdomen. M. J. Brown.—p. 234.
Sodium Theophylline Glycinate. New Theophylline Preparation. W. D. Paul and A. E. Montgomery.—p. 237.
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Preliminary Studies of Bone Decalcification. M. K. Campbell.—p. 250.

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Renaissance of General Practitioner. A. D. Woods.—p. 287.
First-Stage Ether for Brief Anesthesia: Method for General Practitioner. C. L. Heald.—p. 290.

Journal of Allergy, St. Louis

19:215-280 (July) 1948

Neohetramine: Experimental and Clinical Evaluation in Allergic States. L. H. Criep and T. H. Aaron.—p. 215.
Cantharidin Blister Studies. M. Samter.—p. 225.
Allergy in Japan. R. I. Alford.—p. 240.
Climatotherapy in Treatment of Allergic Disease. F. B. Schutzbank.—p. 244.
Dissimilar Sensitivity to Antigen of Segments from Isolated Intestinal Strip. Alice H. Kempf and S. M. Feinberg.—p. 247.
Levels for Pyribenzamine and Benadryl in Blood and Urine Following Single Orally Administered Dose. T. H. McGavack and A. Heisler.—p. 251.
Studies on Histamine and Histamine Anatagonists. U. Serafini.—p. 256.
Antihistamine Drugs in Hay Fever: Comparative Study with Other Therapeutic Methods. W. I. Weiss and R. M. Howard.—p. 271.

Journal of Experimental Medicine, New York

88:1-148 (July) 1948

Cirrhosis and Other Hepatic Lesions Produced in Dogs by Thyroidectomy and by Combined Hypophysectomy and Thyroidectomy. I. I. Chaikoff, T. Hillman, C. Entenman and others.—p. 1.
Particulate Body Associated with Epithelial Cells Cultured from Mammary Carcinoma of Mice of Milk-Factor Strain. K. R. Porter and H. P. Thompson.—p. 15.
Phenomenon of in Vitro Hemolysis Produced by Rickettsiae of Typhus Fever, with Note on Mechanism of Rickettsial Toxicity in Mice. Delphine H. Clarke and J. P. Fox.—p. 25.
Immunochemical Studies on Blood Groups. E. A. Kabat, H. Baer, Ada E. Bezer and others.—p. 43.
Poliomyelitis in Cynomolgus Monkey: Further Observations on Exposures Confined to Stomach and Intestines, with Notes on Fecal Excretion of Virus. H. K. Faber, Rosalie J. Silverberg and L. Dong.—p. 65.
Effect of Sphingomyelin on Growth of Tubercle Bacilli. R. J. Dubos.—p. 73.
Effect of Wetting Agents on Growth of Tubercle Bacilli. R. J. Dubos and G. Middlebrook.—p. 81.
Correlation of Level of Hepatic Riboflavin with Appearance of Liver Tumors in Rats Fed Aminoazo Dyes. E. C. Miller, J. A. Miller, B. E. Kline and others.—p. 89.
Rate of Bactericidal Action of Penicillin in Vitro as Function of Its Concentration, and Its Paradoxically Reduced Activity at High Concentrations Against Certain Organisms. H. Eagle and A. D. Musselman.—p. 99.
Reactivity of Various Human Serums with Mumps Complement Fixation Antigens. Gertrude Henle, Susanna Harris and W. Henle.—p. 133.

Journal of International College of Surgeons, Chicago

11:243-342 (May-June) 1948

*Radicability of Methods to Eliminate Colostomy: Critical Review. H. E. Bacon and R. J. Rowe.—p. 243.
Treatment of Metastatic Cancer in Cervical Lymph Nodes. J. V. Blady.—p. 253.
*Nonfunctioning Gallbladder. W. Bates and G. King.—p. 265.
New Method of Esophagoplasty. G. M. Mes.—p. 270.
Experimental and Clinical Observations on Hypothermia and Procaine. F. M. Allen.—p. 278.
Cutis: Its Various Uses in Surgery. J. E. Cannaday.—p. 282.
Tantalum Wire in Surgery. K. Schlaepfer.—p. 288.
Cotton as Suture Material in Combination with Catgut. A. J. Mendillo and J. Kertesz.—p. 293.
Use of Portacaval Shunts in Management of Portal Hypertension. J. W. Lord.—p. 297.
Resection of Rectosigmoid Region with Preservation of Anal Sphincter. C. S. White.—p. 303.
Aseptic Necrosis of Bone Following Trauma. E. L. Compere.—p. 310.
Ten Years of Plastic Surgery in Penal Institution: Preliminary Report. J. F. Pick.—p. 315.
Present Status of Treatment of Varices and Their Complications. C. A. Protzel and P. Icochea.—p. 325.

Radicalness of Methods to Eliminate Colostomy.—Bacon and Rowe performed abdominoperineal proctosigmoidectomy for adenocarcinoma in 146 patients, 78 men and 68 women, between the ages of 32 and 78 years. The extirpated specimen of bowel was sectioned 2, 4 and 6 cm. below the lower edge of the growth. An abdominoperineal proctosigmoidectomy without colostomy was performed in all. This operation was instituted only when the distance between the anal margin and the lower border of the growth was 6 cm. or more. Preservation of the sphincter musculature does not compromise radicalness provided specific principles are carefully adhered to. The radicalness of proctosigmoidectomy compares favorably with other procedures, and in some respects it permits of even wider excision. The survival rate of five and ten year cures is equal to and in some instances betters the results following the abdominoperineal excision of Miles or the perineoabdominal excision of Gabriel. This is true especially when the rate of resectability is considered. Of the 77 patients resected more than five years ago 41 (52.6 per cent) are living and well. In 20 of these 77 patients the histopathologic reports conformed to grade A growth, with 14 of them alive at five years. Proctosigmoidectomy with preservation of the sphincter musculature does not augment the operative mortality; 18 of 376 patients on whom this operation was performed by the authors for cancer died, a mortality rate of 4.9 per cent. The morbidity, immediate and remote, is in no way affected. A consecutive group of 120 patients, 70 men and 50 women, between the ages of 29 and 73, is reported in which the average stay in bed was 6.6 days and the average hospital stay after operation was 13.4 days.

Nonfunctioning Gallbladder.—Bates and King studied 200 patients with chronic cholecystitis who had been subjected to surgical treatment. There were 18 in whom the gallbladder had been poorly or not all visualized and in whom there were no opacities suggesting gallstones roentgenographically. The general incidence of nonfunctional or nonfilling gallbladder was 9 per cent. There were 4 men and 14 women. The average age was 51 years, with about equal distribution in each decade from 30 to 70 years of age. In no case in this series did intravenous administration of the dye give visualization of the gallbladder if visualization had not been obtained after "intensified oral administration" of the dye. A competent radiologist's report of a nonfunctioning or nonfilling gallbladder carries with it the implication of advanced pathologic change, increased morbidity, difficult surgery and increased mortality. Advanced pathologic change was demonstrated at operation in all cases of nonfunctioning gallbladder in this series. Three of the 18 patients died; since there were only 6 deaths in the entire series of 200 patients, deaths in the nonfunctioning group contributed 50 per cent of the over-all mortality rate. The follow-up records of all 15 surviving patients indicate that good results after leaving the hospital may be expected with surgical treatment of the nonfunctioning gallbladder.

Journal of Investigative Dermatology, Baltimore

10:397-470 (June) 1948

Specificity of Streptococci Isolated from Patients with Skin Disease (Studies on Pemphigus, Dermatitis Herpetiformis, Lupus Erythematosus and Erythema Multiforme): IV. Erythema Multiforme. A. L. Welsh.—p. 401.
Immediate Urticarial Reaction to Intradermal Testing in Penicillin Hypersensitivity. J. Farrington and J. Tamura.—p. 421.
Present Status of Passive Transfer Antibodies in Allergic Eczematous Contact-Type Dermatitis: Failure to Demonstrate Passive Transfer Antibodies. M. Leider and R. L. Baer.—p. 425.
Leishmania Test in Experimental Leishmaniasis (Oriental Sore) in Human Subjects. A. Dostrovsky.—p. 435.
*Bistrimate for Lupus Erythematosus, Lichen Planus and Other Dermatoses. Frances Pascher, H. H. Sawicky, Mabel G. Silverberg and R. Emmet.—p. 441.
Copper Undecylenate in Treatment of Dermatomycoses. F. C. Combes, Ruth Zuckerman and A. Bobroff.—p. 447.
Treatment of Psoriasis with Liquor Carbonis Detergens: Modifications of Goeckerman Treatment. C. C. Ellis, W. E. Wooldridge and R. S. Weiss.—p. 455.

Sodium Bismuth Triglycollamate for Dermatoses.—Pascher and her associates studied the therapeutic effects of "bistrimate" (sodium bismuth triglycollamate) in 92 patients with various dermatoses. There were 45 patients with lupus erythematosus, 32 with lichen planus; the other dermatoses included granuloma annulare, psoriasis, scleroderma and other disorders. The therapeutic assay indicates that the drug is a valuable agent in the treatment of the discoid type of lupus erythematosus. The results in this disease may be rated as good to excellent in 50 per cent of the cases, moderate or fair in 25 per cent and poor in 25 per cent. It is more difficult to evaluate the efficacy of the drug in the exanthematic type of lichen planus, particularly because of the variable course of this disease. Subjective or objective improvement was obtained in 40 per cent of the cases. Twelve per cent grew worse or suffered relapse while under treatment. The results are also equivocal in the hypertrophic form of licen planus. The results in the limited number of cases of scleroderma and granuloma annulare allow no inferences but appear to justify further therapeutic investigation. In general the drug is tolerated well. Recovery from the apparently mild toxic effects was complete within a few days to two weeks in all cases in which sodium bismuth triglycollamate had to be discontinued because of untoward reactions.

Journal of Neurophysiology, Springfield, Ill.

11:279-398 (July) 1948. Partial Index

Effect of Delay of Innervation on Recovery of Muscle After Nerve Lesions. E. Gutmann.—p. 279.
Response of Single Ranvier Nodes to Electrical Stimuli. I. Tasaki and K. Mizuguchi.—p. 295.
Action Currents of Single Nerve Fibers as Modified by Temperature Changes. I. Tasaki and M. Fujita.—p. 311.
Production of Alternating Tremor at Rest in Monkeys. A. A. Ward Jr., W. S. McCulloch and H. W. Magoun.—p. 317.
Effect of Potassium on "Resting" Potential and Respiration of Crab Nerve. A. M. Shanes and H. S. Hopkins.—p. 331.
Analysis of Synaptic Excitatory Action. C. McC. Brooks and J. C. Eccles.—p. 365.
Antidromic Potential Recordings from Bulbar Pyramid of Cat. J. M. Brookhart and R. E. Morris.—p. 387.

Journal of Urology, Baltimore

60:1-196 (July) 1948. Partial Index

Incidence and Extent of Hydronephrosis in Prostatic Obstruction. H. L. Kretschmer and F. H. Squire.—p. 1.
Osteogenic Sarcoma Involving Right Kidney. H. G. Hamer and W. N. Wishard.—p. 10.
Wilms' Tumor. W. J. Daw.—p. 18.
Recognition and Surgical Correction of Retrocaval Ureter: Case Report. C. D. Creevy.—p. 26.
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Diagnosis and Management of Ureteral Ectopia. T. D. Moore.—p. 50.
Injury of Ureter Due to Gunshot Wounds. C. F. Rusche.—p. 63.
Reimplantation of Skin Ureterostomies into Bowel. S. A. Beisler.—p. 76.
Remote End Results of Management of Pedunculated Bladder Tumors. E. G. Crabtree.—p. 85.
Treatment of Bladder Tumors. A. L. Dean.—p. 92.
*Total Cystectomy in Treatment of Vesical Carcinoma. D. O. Ferris and J. T. Priestley.—p. 98.
*Infiltrating Carcinoma of Bladder: Curability by Total Cystectomy. H. J. Jewett and E. L. Lewis.—p. 107.
Hemolysis During Transurethral Prostatic Resection. R. G. Bunge and A. P. Barer.—p. 122.
One-Stage Suprapubic Prostatectomy with Primary Closure of Bladder. W. C. Eikner.—p. 124.
Suprapubic Prostatectomy, Restatement of Principles. A. L. Stockwell. —p. 128.
Pathology of Mumps Orchitis. C. W. Charny and D. R. Meranze. —p. 140.
Lipoma of Scrotum: Case Report. G. R. Livermore.—p. 153.
Congenital Male Sterility. A. Trabucco.—p. 156.
Male Sterility (Or Impaired Fertility). E. A. Slotkin.—p. 166.
Results of Clinical Study in Use of Streptomycin in Urinary Infections. F. K. Garvey and T. E. Canning.—p. 176.
Use of Streptomycin in Treatment of Tuberculosis of Urinary Tract. E. N. Cook and L. F. Greene.—p. 187.

Total Cystectomy in Vesical Carcinoma.—Ferris and Priestley list the following indications for cystectomy, with the reservation that they constitute merely a working plan on which they have been selecting patients: (1) a low grade lesion with minimal or moderate infiltration, provided it involves a major portion of the vesical wall; (2) a similar type of lesion which is of multicentric origin; (3) repeatedly recurring lesions of low grade; (4) an infiltrating or high grade lesion which cannot be widely removed by segmental resection, and (5) any vesical carcinoma the complete removal or destruction of which would result in serious interference with normal vesical function. Recurrent high grade lesions seldom are suitable for radical surgical treatment because of extravesical extension. Different procedures are employed currently to accomplish removal of the bladder. At the Mayo Clinic, cutaneous ureterostomy has been performed in only 7 per cent of the 111 cases in which total cystectomy has been accomplished for carcinoma in the ten years 1937 to 1946, inclusive. For the most part, procedures other than ureterosigmoidostomy were employed in the earlier cases and have been used less frequently during recent years. It is undesirable to transplant one ureter to the skin and the other to the bowel, as the patient then has the disadvantages of both these abnormal methods of urinary drainage. The authors started to use three stages, transplanting each ureter to the bowel in separate stages and subsequently removing the bladder. Later, 2 stages were employed, a simultaneous bilateral ureterosigmoidostomy constituting the first stage and removal of the bladder forming the second stage. During the past 3 years, 1 stage has been used in the majority of the cases. Thus, in 1946, total cystectomy was performed in 33 cases and in 24 cases a one stage operation was employed. The 1 stage procedure now is the method of choice, but it should not be suggested until familiarity with the operation has been acquired. The hospital mortality rate for 1942 to 1946, inclusive, was 8 per cent, as compared with a rate of 25 per cent for the previous five years, 1937 to 1941, inclusive. The ultimate results depend, to a great extent, on the type of case in which this operation is performed. Whereas 29 per cent of patients survived three or more years after operation, only 19 per cent survived five or more years after cystectomy.

Cystectomy for Infiltrating Carcinoma of Bladder.—Jewett and Lewis discuss the correlation between the exact depth to which the tumor has penetrated the vesical wall and the survival of the patient after cystectomy. Their studies were made on 54 patients. In 41 cases in which the infiltration was deep there were no instances of cure. In 13 cases in which the infiltration was superficial there were only 2 patients who were known to have died of cancer. Three patients have lived over five years without evidence of recurrence of tumor. A preoperative pelvic examination was made and the results recorded in 40 of these 54 cases of cystectomy. In each of 31 cases in which deep infiltration was found microscopically, it had been detected before operation by palpation of a rubbery or stony hard mass in the vesical wall. When rubbery or stony induration was absent on preoperative examination, subsequent microscopic sections always showed superficial infiltration. The over-all end results of total cystectomy cannot be compared with those obtained by conservative procedure, since the conservative methods are often employed in the cases of smaller tumors which are apt to be potentially curable, whereas cystectomy in the past has been reserved for the most part as a heroic measure in deeply infiltrating, extensive and incurable tumors.

Kansas Medical Society Journal, Topeka

49:229-276 (June) 1948

Treatment of Congestive Heart Failure. A. C. Ernstene.—p. 229.
Periarteritis Nodosa: Report of Case with Unusual Features. N. Uhr and R. Chess.—p. 232.
Problems of Anesthesia for Tuberculous Patient. Gretchen Guernsey and P. H. Lorhan.—p. 238.
Psychiatric Program of University of Kansas Medical Center. W. F. Roth Jr.—p. 241.

49:277-320 (July) 1948

Choice of Anesthetic Agents and Procedures. E. B. Tuohy, T. A. Guenther and F. J. Grabill.—p. 277.
Indications and Contraindications for Splenectomy in Hematologic Diseases. S. J. Wilson.—p. 281.
Rh Negative Mother in Private Obstetric Practice. R. A. West and N. C. Siebert.—p. 285.
*Use of Testosterone Propionate in Nitrogen Retention. F. W. Matassarin.—p. 287.

Testosterone Propionate in Nitrogen Retention.—Matassarin noticed that when testosterone was used in the treatment of patients with prostatic disorders the nonprotein nitrogen returned to normal more quickly than would have been expected with catheter drainage alone. He used this hormone in 50 cases with reduction of the urea nitrogen. These cases have included both men and women, ranging in ages from 21 to 83 years. They cover a variety of conditions, such as nephritis, prostatis, cholecystitis, heart disease, prostatic hypertrophy, toxemia of pregnancy, postoperative intestinal obstruction and senility. The author hopes that others will study this problem further, both clinically and experimentally.

Kentucky Medical Journal, Bowling Green

46:253-300 (July) 1948

Vascular Degeneration. E. L. Bortz.—p. 257.
Treatment of Syphilis. G. Brockman.—p. 263.
Management of Occipito Posterior Positions. C. J. McDevitt.—p. 269.
Résumé of Treatment of Acute Sinusitis. J. S. Bumgardner.—p. 271.
Recent Advances in Treatment of Pulmonary Tuberculosis. J. S. Harter. —p. 273.
Boecks Sarcoidosis. O. O. Miller.—p. 277.
Tumors of Kidney: Classification and General Conditions. J. A. Bowen—p. 282.
Clinical Manifestations of Renal Neoplasm. J. M. Townsend.—p. 283.
Therapy from Standpoint of Surgery and Radiation. L. Atherton. —p. 285.
Eye Manifestations of Vascular Systemic Disturbances. D. J. Lyle. —p. 287.
Use of Rabbit Serum in Treatment and Prophylaxis of Whooping Cough. M. Z. Kaplan and J. B. Larson.—p. 292.

Michigan State Medical Society Journal, Lansing

47:690-816 (July) 1948

Newer Concepts in Diagnosis of Glaucomas. H. S. Sugar.—p. 721.
Osteochondritis Dissecans and Osteochondromatosis. L. L. Swenson.—p. 728.
*Benign Pulmonary Histoplasmosis: Familial Incidence. R. F. Weyher.—p. 737.
Aims and Purposes of the Specialty Boards: Special Reference to the American Board of Surgery. J. S. Rodman.—p. 741.
The Nursing Problem. T. P. Murdock.—p. 745.
Nursing—Service Aspects. Janet M. Geister.—p. 747.

Benign Pulmonary Histoplasmosis: Familial Incidence.—Weyher points out that whereas earlier reports were concerned with the form which has a grave prognosis, recent reports indicate that there is a benign pulmonary form of histoplasmosis, which is widespread throughout some sections of the United States. The author reports a family group, parents and 3 children, who have lived intermittently in Tennessee. Four of the group are considered to have benign pulmonary histoplasmosis. Although the entire family has been observed for nearly three years, and all members are clinically well at the time of this report, serial roentgenograms of 2 of the children, showing widespread pulmonary calcifications, demonstrate increasing density of the individual areas involved during the period of study. The reactions to histoplasmin in this family and the reproduction of Histoplasma capsulatum are not to be construed as proof of the causation of calcifications shown in the roentgenograms of the chest, since histoplasmin tests are not specific for this organism alone. Clinically the cases appear to fit descriptions of the benign form of this disease. Since no effective therapy exists for the disease, it is suggested that persons with so-called benign cases of the pulmonary form who move away from the areas in which they contracted the infection should avoid returning to the same regions for any protracted stay, especially during the summer months, since apparently reinfection may occur.

Nebraska State Medical Journal, Lincoln

33:225-260 (July) 1948

Abdominal Allergy. J. M. Sheldon.—p. 229.
Program for Improvement of Psychiatric Care in Nebraska. R. H. Young.—p. 232.
Immunization Against Influenza. W. Thompson.—p. 236.
Immunization Against Measles, Scarlet Fever. G. C. O'Neil.—p. 239.
Whooping Cough Immunization. H. M. Jahr.—p. 241.

33:261-296 (Aug.) 1948

Things I Want to Say. J. E. M. Thomson.—p. 264.
Prostatitis: Especially as It Relates to Cause, Treatment and Significance. R. B. Henline.—p. 266.
Convulsive Disorders: Modern Concepts—Diagnosis and Treatment. E. Kelley.—p. 274.
Symptomatic Seizures in General Medical Conditions. E. E. Simmons and R. S. Long.—p. 277.
Neurosurgical Aspects of Epilepsy. A. I. Finlayson.—p. 280.
Calcium, Phosphorus and Phosphate Metabolism. E. J. Kirk and D. R. Jackson.—p. 284.

New England Journal of Medicine, Boston

239:1-34 (July 1) 1948

Focal Epilepsy: Statistical Study of Its Causes and Results of Surgical Treatment. II. Epilepsy Secondary to Cerebral Trauma and Infection. J. C. White, C. T. Liu and W. J. Mixter.—p. 1.
Aggressive Behavior—Its Psychiatric and Physiologic Aspects, Especially in Combat Veterans. L. Alexander.—p. 10.
Primary Teratomatous Chorionepithelioma of Ovary: Report of Case. H. M. Oliver and E. O. Horne.—p. 14.
Yaws in Massachusetts. J. G. Downing.—p. 17.
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Malignant Lymphoma, Hodgkin's Type.—p. 25.

239:35-74 (July 8) 1948

Retropubic Prostatectomy. G. Austen Jr. and W. C. Quinby.—p. 35.
Amebic Abscess of Liver. Therapeutic Problems in Various Types of Late Hepatic Amebiasis. E. H. Drake and T. A. Warthin.—p. 45.
*Desirability of Routine Use of Tetanus Toxoid. E. Press.—p. 50.
Papillary Cystadenocarcinoma of Both Ovaries: Report of Case with Apparent Cure Eight Years After Operation. G. L. Gaudrault.—p. 56.
Malaria. W. M. Geiman.—p. 58.
Papillary Serous Adenocarcinoma.—p. 64.
Tuberculous Salpingitis and Endometritis.—p. 67.

Desirability of Routine Use of Tetanus Toxoid.—According to Press, additional information regarding the effectiveness and hazards of active immunization against tetanus has become available during the last few years. Press presents evidence for and against routine active immunization. It was found that about 50 per cent of all injuries leading to tetanus in the civilian population were trivial. The majority of bacteriologic studies revealed that tetanus spores were widely distributed and more frequently found in human feces than in those of horses. The mere presence of tetanus spores in a wound was not sufficient to cause the disease. Statistical evidence shows that less than 20 per cent of the cases of tetanus are reported in the United States. There were at least 910 deaths due to tetanus in the United States in 1940. The conscientious physician, aware of the widespread distribution of tetanus spores, knowing the potentiality of tetanus with trivial injuries and being unable to determine which cases might go on to develop it, would be forced to give tetanus antitoxin for nearly all injuries. In view of the definite effectiveness of tetanus toxoid and its almost complete freedom from adverse reactions, its use seems to be indicated. The not infrequent failure of tetanus antitoxin prophylactically is indicated by the fact that in spite of its use tetanus developed in about 7 per cent of civilian and over 50 per cent of military cases. To avoid the increased risk of anaphylaxis and the more frequent allergic reactions to repeated doses of tetanus antitoxin, it is advisable to give toxoid concurrently with each inoculation of tetanus antitoxin. If this active immunization is then completed, it should be unnecessary to use antitoxin for any future injuries in a person by then sensitized to horse serum. Active immunization against tetanus is indicated. It should be given routinely by private physicians and should also be included in health department programs for all children. The toxoid should be given to children combined with diphtheria or pertussis vaccine, or both. In addition, children who have been immunized for diphtheria and pertussis, but not for tetanus, should have tetanus toxoid available and be encouraged to use it. Adults with increased accident hazards, such as manual laborers in both rural and urban areas, should also be immunized.

New Orleans Medical and Surgical Journal

100:445-490 (April) 1948

Pruritus Ani and Vulvae. M. T. Van Studdiford and L. D. McLean.—p. 445.
Present Status of Knowledge Concerning Spread of Poliomyelitis. D. E. Loveman.—p. 449.
Urologic Complication Following Operation for Imperforate Anus. R. F. Sharp and A. Brin.—p. 456.
Central Fractures of Neck of Femur: Critical Review of 300 Cases. I. L. Geroge.—p. 459.
Double Notched Graft for Lumbosacral Spine Fusion. A. R. Altenberg.—p. 464.
Congenital Ocular Anomalies Resulting from (a) Premature Birth (b) Rubella Infection of Mother During Pregnancy. W. R. Buffington.—p. 466.
*Intravenous Ether (Diethyloxide): Use in Treatment of Cases of Impending Gangrene and Impaired Circulation. O. C. Williams.—p. 470.
Fractured Ribs from Coughing. J. M. Bodenheimer.—p. 474.
*Sulfone Treatment of Leprosy. P. T. Erickson, R. R. Wolcott and F. A. Johansen.—p. 475.

Intravenous Ether in Impending Gangrene.—Williams reports on the intravenous use of ether in the treatment of 22 patients with impending ischemic gangrene, diabetic ischemia, arteriosclerosis and hypoplastic ulcer. He used a 2.5 per cent solution of ether—namely, 25 cc. of stock ether to 1,000 cc. of 5 per cent dextrose in distilled water or in isotonic sodium chloride solution—in all of his cases. The 1,025 cc. of solution is given daily, intravenously, the flow being started at 40 drops per minute, and if no reaction occurs, being stepped up to about 50 drops per minute, but not over 60 per minute. He decided that twelve bottles would represent a course, and that he would then give a few days rest, and repeat all laboratory tests before starting on a second course. All patients were thoroughly studied prior to treatment. Blood pressure reading, pulse and temperature records were made during the administration of the drug. Results have been encouraging. Relief from pain has been one of the most gratifying findings. The treatment with ether has not been unpleasant to the patient. It is considered a safe drug in the given dilution. It can be given while the patient is being prepared for operation.

Sulfone Treatment of Leprosy.—Erickson and his associates say that the sulfone drugs have proved to be more effective in lepromatous leprosy than any previous drug tried at Carville. "Promin" (sodium p,p'-diaminodiphenylsulfone-N,N'-didextrose sulfonate), "diasone" (disodium formaldehyde sulfoxylate diaminodiphenylsulfone) and "promizole" (4,2'-diaminophenyl-5'-thiazolylsulfone) are related chemically to one another by having in common the diaminodiphenylsulfone radical. There is reason to believe that the diaminodiphenylsulfone radical is the active principle, although this has not been definitely established. No claim is made that these drugs are specific remedies for leprosy, but the superiority of the sulfones over chaulmoogra oil is significantly demonstrated by the complete abandonment of the latter treatment in favor of the sulfones at Carville. Objective and subjective clinical improvements are produced by these drugs that cannot be attributed to spontaneous regression of the disease. Improvements are slow in their development but are progressive during treatment. The disease seldom if ever gets worse during treatment. Laboratory examinations indicate a slow but steady decrease in acid-fast organisms in the skin. Negative cutaneous smears and arrest of the disease occur. So far no relapse in arrested cases has been reported.

New York State Journal of Medicine, New York

48:1423-1534 (July 1) 1948

Estrogens in Diabetes. H. Marcus and S. Glotzer.—p. 1461.
Use of New Antihistaminic Combination in Treatment of Allergic Disorders. E. B. Brown and F. W. Brown.—p. 1465.
Devices for Rapid Recording of Unipolar Electrocardiogram. A. Lieberson and A. A. Goldbloom.—p. 1467.
Streptomycin and Surgery in Treatment of Tuberculous Joints. A. A. Michele and F. J. Krueger.—p. 1470.
Clinical Evaluation of Neo-Antergan and Antistine in Treatment of Ragweed Hay Fever. L. Levin and E. Schwartz.—p. 1474.
Streptomycin in Chronic Tuberculosis. J. N. Hayes and H. F. Parry.—p. 1477.
*Gangrene of Both Legs Following Femoral Vein Ligation. J. Sarnoff.—p. 1480.
Treatment of Venous Thrombo-Embolism. S. W. Cospriff, R. J. Cross and D. V. Habif.—p. 1483.
What Is Normal Blood Pressure? H. I. Russek.—p. 1485.
Surgical Treatment of Hypertension. D. P. Boyd.—p. 1487.
Electrocardiogram in Catatonic Schizophrenia. S. Major.—p. 1489.
Pilonidal Cyst Surgery: Modification. A. J. Cantor.—p. 1492.
Management of Severe Postlumbar Puncture Headache. R. E. Ahearn.—p. 1495.

Gangrene of Legs Following Ligation of Femoral Vein.—Sarnoff reports the case of a man, aged 50, who suffered a heart attack in December 1946 for which he was hospitalized for four weeks. When he was almost well enough to go home he had two attacks of chills. To avoid the possibility of emboli, the attending physician advised ligation of both femoral veins, which was done the following day. Immediately after the ligation both legs became cyanotic, and in the course of the next few days became gangrenous. The patient received a number of paravertebral nerve blocks in the hope of relieving the spasm of the arteries, and thereby helping to establish collateral circulation, but to no avail. Both legs were amputated below the knee. Similar accidents have occurred. They illustrate that ligation of the femoral vein is not to be considered lightly.

Ohio State Medical Assn. Journal, Columbus

44:671-768 (July) 1948

Collateral Findings and Supportive Therapy in Acne Vulgaris. J. D. Walters.—p. 697.
*Non-Tuberculous Pulmonary Calcification. J. A. Prior.—p. 700.
Some Further Observations on Prognosis After Coronary Occlusion. H. C. King.—p. 704.
Palindromic Rheumatism—Effective Treatment with Gold. M. Ginsburg.—p. 707.
*Complete Transposition of Great Cardiac Vessels. E. W. Miskall and J. A. Fraser.—p. 709.
Cosmetic Plastic Surgery—Its Relationship to Personality. J. G. Himmel.—p. 711.
Hydatidiform Mole in a Twin Pregnancy with Viable Fetus. H. V. Mishler and G. R. Dickerhoof.—p. 714.
Psychiatric Units in General Hospitals. L. Pillersdorf.—p. 716.
Myxedema Heart with Cardiac Failure. R. H. Schoene and A. L. Pollock.—p. 718.
Fibroma of Ovary with Ascites and Hydrothorax. P. M. Spurney.—p. 722.

Nontuberculous Pulmonary Calcification.—Prior says that in recent years the possible relationship between calcified lesions of the lungs, especially as they occur in the Eastern Central states, and the rare fungus disease histoplasmosis has been a subject of growing interest. Studies in Ohio have confirmed in general this geographic pattern of the incidence of positive histoplasmin reactors. Five thousand and eighty-seven Ohio State University freshmen and student nurses training in Columbus, all of whom were lifetime residents of some one county, were surveyed with roentgenograms of the chest, tuberculin and histoplasmin cutaneous tests. Every county in the state was represented in the group studied. The author believes that in the Eastern Central portion of the United States there is a better correlation between pulmonary calcifications and a positive histoplasmin reaction than with a positive intradermal tuberculin reaction, and in cases of disseminated pulmonary calcification there is an even higher incidence of histoplasmin reactors. This same geographic area in which there is excessive pulmonary calcification with not infrequent miliary distribution corresponds rather closely to both the endemic area of histoplasmosis and the region of high incidence of histoplasmin reactors. The concept of the causation of pulmonary calcifications needs revision. Although many are the result of a true tuberculous infection, calcification may also occur as the result of benign forms of coccidioidomycosis and histoplasmosis or other closely related agent or agents with similar antigenicity.

Transposition of Great Cardiac Vessels.—Miskall and Fraser report the case of a white infant girl with a bifid eighth thoracic vertebra and other defects, who died in the eleventh month. This case typifies one of those cyanotic congenital cardiac defects for which, according to Blalock and Taussig, surgical treatment is of no value. In this anomaly there is an altered relationship of the great vessels to one another and to their respective ventricles in such a manner that the aorta arises from the right ventricle and the pulmonary artery from the left ventricle. The blood is pumped from the left ventricle through the pulmonary artery to the lungs, and it returns to the left auricle through the pulmonary veins. Through the aorta the blood is pumped by the right ventricle to the greater systemic circuit. It returns to the right side of the heart through the venae cavae. In the absence of a septal defect, this condition is incompatible with life since no oxygenated blood can go from the pulmonary to the systemic circulation.

Philippine Medical Association Journal, Manila

24:281-350 (June) 1948

Role of Philippine Medical Association in Promotion of Public Health. G. Rustia.—p. 293.
For Medical Service Within Reach of Poor People. F. Lopez.—p. 307.
Extensive Bone Formation in Vitreous Chamber in Atrophic Eyeball: Report of Case. A. S. Fernando and F. T. Bongco.—p. 313.
Five Unusual Surgical Diseases of Abdomen. F. C. Guzman and R. L. Alfonso.—p. 317.
Relation of Tropical Diseases to Surgery. P. M. Recio.—p. 323.
Biochemical Studies on Tuberculosis: II. Nucleic Acid Reaction of Serum in Tuberculosis. J. F. Leyva.—p. 327.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

68:1-224 (May) 1948. Partial Index

*Differential Agglutination of Normal and Sensitized Sheep Erythrocytes by Serums of Patients with Rheumatoid Arthritis. H. M. Rose, C. Ragen, Elizabeth Pearce and Miriam O. Lipman.—p. 1.
Chloromycetin in Treatment of Patients with Typhus Fever. J. E. Smadel, A. P. Leon, H. L. Ley Jr. and G. Varela—p. 12.
Outbreak of Equine Encephalomyelitis, Eastern Type, in Southwestern Louisiana. B. F. Howitt, L. K. Bishop, R. H. Gorrie, R. E. Kissling and others.—p. 70.
Penicillin in Cerebrospinal Fluid Following Parenteral Penicillin. W. P. Boger, R. B. Baker and W. W. Wilson.—p. 101.
Lipid Anticoagulant from Brain Tissue: Physiochemical Characteristics and Action in Vitro and in Vivo. L. M. Tocantins, R. T. Carroll and T. J. McBride.—p. 110.
Isolation of Vitamin K_2 from Cultures of Spore-Forming Soil Bacillus. M. Tishler and W. L. Sampson.—p. 136.
Changes in Electrocardiogram Associated with Standing. D. Scherf and M. Schlachman.—p. 150.
Effect of Phrenicotomy on Gastrointestinal Mechanisms. N. C. Jefferson and H. Necheles.—p. 166.
*Effect of Intravenous Administration of Human Serum Albumin on Renal Function. W. H. Cargill.—p. 189.
*Accidental Laboratory Infection with Human Dengue Virus. J. L. Melnick, E. C. Curnen and A. B. Sabin.—p. 198.

Agglutination of Sheep Erythrocytes by Serum of Patients with Rheumatic Arthritis.—Rose and his associates describe a differential sheep cell agglutination test wherein the agglutination titers of human serum for normal and sensitized sheep erythrocytes are compared. High differential titers have been found to occur almost solely in the serums of patients with active rheumatoid arthritis. Although the nature of the substance and its significance with regard to the rheumatoid state remain to be determined, the present observations indicate that the sheep cell differential agglutination test may be of value in determining the activity status of patients suffering from rheumatoid arthritis. It may also prove to be helpful in the differential diagnosis between rheumatoid arthritis and other diseases with arthritic manifestations, such as rheumatic fever.

Administration of Serum Albumin and Renal Function.—Cargill points out that Thorn and co-workers had noted that the intravenous infusion of concentrated human serum albumin often produces a transient diuresis in patients with nephrosis and Laennec's cirrhosis. These authors studied the immediate effect of rapid injection of a large amount of albumin on glomerular filtration rate and renal blood flow. The clearance technics of Smith, Goldring and Chasis have been followed, using inulin and sodium para-aminohippurate. Rapid intravenous infusion of 75 Gm. of human serum albumin produced a consistant increase in glomerular filtration rate and renal blood flow. These changes were accompanied by both an increased clearance and a decreased tubular extraction of sodium para-aminohippurate. In 2 patients with nephrotic syndrome of chronic glomerulonephritis administration of albumin increased the filtration rate from low to normal levels, and in 1 of these patients it produced considerable diuresis.

Laboratory Infection with Dengue Virus.—Melnick and his co-workers say that in the course of experiments with chimpanzees, human dengue virus was accidentally introduced onto the conjunctival surface of the eye of a laboratory worker. This was followed nine days later by a febrile illness, clinically compatible with dengue. Neutralizing antibodies for the homologous mouse-adapted strain of dengue virus were absent in the patient's serum taken one day after the onset of fever, but were present in high titer in specimens of serum obtained thirteen, twenty-five and forty-five days after onset.

Psychoanalytic Quarterly, Albany, N. Y.

17:149-302 (April) 1948

Three Tributaries to Development of Ambivalence. E. Bergler.—p. 173.
Concurrent Analysis of Married Couples. B. Mittelmann.—p. 182.
Problems of Psychoanalytic Training. M. Gitelson.—p. 198.
Boswell: The Biographer's Character. Psychoanalytic Interpretation. E. Hitschmann.—p. 212.
Effects of Shock Treatment on Ego. J. Frosch and D. Impastato.—p. 226.
Dynamic Basis of Anti-Semitic Attitudes. N. W. Ackerman and Marie Jahoda.—p. 240.

Psychosomatic Medicine, Baltimore

10:133-192 (May-June) 1948

Infantile Personality: Core Problem of Psychosomatic Medicine. J. Ruesch.—p. 134.
Effect of Anxiety on Human After-Discharges: Psychosomatic Study of After-Contraction. M. R. Sapirstein.—p. 145.
Personality Types in Soldiers with Chronic Nonulcer Dyspepsia. S. R. Rosen, Helen Keeosian, R. Schwartz and others.—p. 156.
Experiment with Comprehensive Medicine. G. Saslow.—p. 165.

Radiology, Syracuse, N. Y.

50:725-882 (June) 1948

Some Considerations of Roentgen Diagnosis of Silicosis and Conditions That May Simulate It. E. P. Pendergrass and A. G. Robert.—p. 725.
Significance of Occupational History in Diagnosis of Silicosis. T. F. Hatch.—p. 746.
Anthraco-Silicosis. W. J. Corcoran.—p. 751.
Pathogenesis of Industrial Pulmonary Disease. W. Machle.—p. 755.
Further Observations of Lung Changes Associated with Manufacture of Alumina Abrasives. C. G. Shaver.—p. 760.
*Delayed Chemical Pneumonitis or Diffuse Granulomatosis of Lung Due to Beryllium. S. A. Wilson.—p. 770.
Penile Carcinoma: Review of 43 Cases Treated at Bellevue Hospital During Past Twenty-Five Years. J. Zausner.—p. 786.
Studies of Circulation by Roentgencinematography. N. Westermark.—p. 791.
Preliminary Observations on Effects of Irradiation upon Chylomicrons in Human Blood. Kai Setälä.—p. 803.
Effects of Small Daily Doses of Fast Neutrons on Mice. T. C. Evans.—p. 811.

Chemical Pneumonitis Due to Beryllium.—Wilson shows that opportunity for exposure to beryllium starts in the beryl mines. In plants engaged in extracting beryllium from the ore and in the production of beryllium salts and oxides there has been definite evidence of disease among employees. The same has been true in metallurgical plants where beryllium has been used as a constituent in the production of alloys. Cases have been reported in workers coating fluorescent lamps and neon tubes. At least 1 case has arisen in the radio tube industry, and a few where the metal or its oxide was being ground. Beryllium or its compounds may be found in chemical and pharmaceutic plants. It is a possible hazard in research laboratories. Its use has been reported where gas mantles and some ceramics are made. Not all of these industries have experienced the development of pulmonary disease among their workers. In those that have, the symptoms, roentgen pattern and pathologic changes have been so similar that a common denominator is suspected, this denominator being beryllium or one of its compounds. The recognition of the roentgen manifestations of the pulmonary changes in beryllium workers is most important.

South Dakota Journal of Medicine, Sioux Falls

1:179-216 (May) 1948

Therapy of Common External Diseases of the Eye. E. P. Burch.—p. 179.
Climate and Resistance to Infection. C. A. Mills.—p. 184.
Porphyria (with Case Report). C. E. Kemper.—p. 187.
Transorbital Lobotomy: Preliminary Report of Twenty-Four Cases. F. W. Haas and D. B. Williams.—p. 191.
Streptomycin in Treatment of Complications of Whooping Cough. J. Decanic.—p. 193.

Southern Medical Journal, Birmingham, Ala.

41:575-666 (July) 1948. **Partial Index**

Reconstructive Surgery of Fallopian Tubes Employing Cannula. V. D'Ingianni.—p. 575.
Brain Repair: III. Some Practical Chronologic Aspects. S. P. Hicks.—p. 581.
Chronic Intestinal Intussusception in Adult. J. W. Snyder.—p. 586.
Management of Lye Burns of Esophagus. G. E. Fisher and J. J. Hicks.—p. 591.
*Anemia of Malignancy. A. J. Schwertman.—p. 598.
Practical Value of Liver Function Tests in Clinical Medicine. D. F. Marion and J. M. Rumball.—p. 601.
Untoward Reactions and Cutaneous Testing in Penicillin Therapy. J. Farrington, Kathleen Riley and S. Olansky.—p. 614.
Disappearing General Practitioner: Causes, Effects and Remedies. S. P. Kenyon.—p. 620.
Role of Small Community Hospital in Medical Education. W. T. Sanger.—p. 624.
Effectiveness of Various Diagnostic Criteria in Recognition of Subclinical Poliomyelitis in Field. A. E. Casey, W. I. Fishbein and I. Abrams.—p. 627.
Observations on Mood After Stellate Ganglionectomy. L. J. Karnosh and W. J. Gardner.—p. 631.
*Isopropyl Alcohol Intoxication. W. M. McCord, P. K. Switzer and H. H. Brill Jr.—p. 639.
Evaluation of Newer Therapy of Ulcerative Colitis. J. A. Bargen.—p. 646.

Anemia of Cancer.—The studies reported by Schwertman were made on 58 patients with carcinoma of eight common sites. They are based on the initial blood count, hemoglobin and color index. In 10 cases of carcinoma of the breast the average erythrocyte count was 4,300,000 and the color index was 0.98. The presence of metastases in these patients did not noticeably influence the concurrent anemia. In 10 cases of carcinoma of the colon, the average number of erythrocytes was 3,900,000, and the color index 0.9. In 10 cases of carcinoma of the prostate the average erythrocyte count was 4,390,000, and the color index 1.0. In 8 cases of carcinoma of the body of the uterus, the average erythrocyte count was 4,150,000 and the color index 0.92. In 4 cases of carcinoma of the bladder the respective figures were 4,110,000 and 0.95; in 7 cases of carcinoma of the cervix, 3,800,000 and 0.94; in 4 cases of carcinoma of the ovary, 4,001,000 and 0.95, and in 4 cases of carcinoma of the kidney, 4,500,000 and 0.98. In general, anemia is greater when hemorrhage, ulceration and necrosis occur. In some cases, even in the presence of metastasis, anemia does not occur.

Isopropyl Alcohol Intoxication.—McCord and his associates point out that as the industrial demand for ethyl alcohol has increased, isopropyl alcohol has been substituted for it wherever possible. Its use in industry is now widespread and it has become readily available to the general public in the form of rubbing alcohol. The authors present the histories of 3 patients who had ingested rubbing alcohol. In 2 of these isopropyl alcohol was chemically identified. In the third, there was a strong odor of isopropyl alcohol on the breath and in the stomach contents. The action of isopropyl alcohol on man is similar to the action of ethyl alcohol with the exception that coma occurs at lower blood concentrations of isopropyl alcohol than of ethyl alcohol. In 2 cases a profound coma occurred with a blood concentration of isopropyl alcohol of approximately 150 mg. per hundred cubic centimeters. Treatment consisted of gastric lavage, fluids as indicated and symptomatic therapy. Recovery was rapid with no apparent untoward sequelae.

Surgery, St. Louis

24:1-160 (July) 1948

Resection of Thoracic Esophagus for Carcinoma Located Above Arch of Aorta: Cervical Esophagogastrostomy. J. H. Garlock.—p. 1.
Combined Left Abdominal and Right Thoracic Approach to Resection of Esophageal Neoplasms. J. E. Macmanus.—p. 9.
Intravenous Cholecystography with Tetraiodophthalic Fluorescein. G. E. Moore and M. J. Smith.—p. 17.
Method of Making Tubes of Polyethylene Film for Use in Anastomosis of Common Bile Duct, Trachea, and Pelvic Colon. J. H. Grindlay. —p. 22.
Management of Ileosigmoidal Fistula in Diverticulitis: Clinical Syndrome and Report of 4 Cases. R. R. Best.—p. 30.
Tumors of Small Intestine. H. A. Weinberger, and R. M. Paltauf. —p. 35.
Pancreatic Cyst: Internal Drainage Utilizing Roux Principle. A. V. Migliaccio and E. C. Laurelli.—p. 54.
Chronic Inflammatory Intestinal Obstruction Due to Enterobius Vermicularis. J. M. Miller and M. Ginsberg.—p. 57.
*Relation of Pancreatic Secretion to Peptic Ulcer Formation: Effect of Pancreatectomy, Ligation of Pancreatic Ducts, and Diabetes on Production of Histamine-Induced Ulcers in Dog. E. J. Poth, L. J. Manhoff Jr. and A. W. DeLoach.—p. 62.
Stomach as Cause of Difficulty in Intubating Human Duodenum with Introduction of Use of Gastric Balloon. J. J. Wild.—p. 70.
Experimental Studies in Vascular Repair: I. Comparison of Reliability of Various Methods of End-to-End Arterial Sutures. H. B. Shumacker Jr. and R. I. Lowenberg.—p. 79.
Treatment of Experimental Uremia by Intestinal Lavage. Beverly H. White and H. N. Harkins.—p. 90.
Neutralization of Heparin by Protamine. L. L. Cowley and C. R. Lam. —p. 97.
Patella Fractures: Method of Wiring. A. A. Michele and F. J. Krueger. —p. 100.
Use of Cancellous Bone Grafts for Small Defects of Skull and Brow Region. B. C. Martin.—p. 103.
Compound Transverse Fracture of Maxilla: Report of Case with Zygomatic Fixation. G. Cubero.—p. 109.
Effects of Supine Position on Ventilation of Lungs of Dogs. C. K. Drinker and Esther Hardenbergh.—p. 113.
Posterior Cisternal Drainage of Hydrocephalic Third Ventricle (Posterior Third Ventriculostomy): Preliminary Note. A. Schuller.—p. 119.

Pancreatic Secretion and Formation of Peptic Ulcer.—Poth and his associates studied the influence of the secretory activity of the pancreas on the formation of ulcers. Sixteen dogs were divided into four groups. Group I served as controls, group II was subjected to total pancreatectomy, group III had the pancreatic ducts ligated and group IV was made diabetic by the administration of alloxan. All of these animals received intramuscular injections of histamine in beeswax. Two control animals which were placed on the same feeding regimen as the dogs operated on had no symptoms of ulcer, and only 1 of them showed an ulcer after forty-five days. When the pancreatic secretion was diverted from the duodenum multiple severe ulcers developed. In both the ulcerations were much severer than have ever been observed in normal animals receiving histamine. It is obvious that the presence of the alkaline pancreatic juice in the duodenum is of great importance in the prevention of ulcers. Although removal of this secretion by extirpation of the gland does not of itself produce ulcers, it is apparent from the results of histamine stimulation that there is a strong predisposition to ulcer formation following pancreatectomy. These experiments do not indicate that diabetes exerts an inhibitory effect on the formation of peptic ulcers. The depancreatized animals were completely diabetic; yet ulcers developed in them just as rapidly and just as extensively as in the animals that had only the pancreatic ducts ligated. The alloxan-diabetic animals showed no lesser tendency toward induced formation of ulcer than did the normal controls. Removal of the pancreas or ligation of its ducts, as is frequently done in surgical procedures on the duodenum or pancreas, is not without danger of postoperative ulceration. It would seem to be advisable to reanastomose the pancreatic duct to the duodenum or jejunum whenever possible after resection of the head of the pancreas. It is doubtful that resection of the vagus nerve at the level of the diaphragm should interrupt a sufficient number of the parasympathetic fibers to the pancreas to alter significantly its secretion.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

56:377-432 (July) 1948

Additional Data in Technic of Vaginal Hysterectomy. N. S. Heaney. —p. 377.
Surgical Treatment of Congenital Pulmonary Stenosis: Tetralogy of Fallot. J. D. Stenstrom.—p. 386.
Neuro-Endocrine and Psychodynamic Factors in Sterility. H. B. Friedgood.—p. 391.
Congenital Intestinal Obstruction. S. F. Herrmann.—p. 399.
Consideration of Some Uterine and Ovarian Tumors. A. H. Curtis. —p. 404.
*Aberrant Pancreas in Meckel's Diverticulum Causing Intestinal Obstruction. R. R. De Nicola.—p. 407.
Primary Abdominal Pregnancy in Lesser Peritoneal Cavity. N. D. Elzey. —p. 410.
*Rupture of the Vaginal Vault During Coitus. A. W. Diddle.—p. 414.
Subacute and Chronic Nonsuppurative Thyroiditis. D. F. Brayton. —p. 417.

Aberrant Pancreas in Diverticulum Causing Intestinal Obstruction.—The case presented by De Nicola concerned a boy, aged 13, who suddenly became ill with severe constant pain in the lower part of the abdomen, associated nausea and vomiting, headache, high grade fever and profuse diarrhea. The abdomen was spastic throughout, mildly distended and tender, mostly on the left side. The patient was treated under the diagnosis of severe gastroenteritis, and conservative measures such as chemotherapy, intravenous administration of fluids and intestinal intubation saw him through a stormy course lasting two weeks. The patient had several similar attacks, each requiring hospitalization for weeks at a time. At a fifth attack signs of peritonitis were present and a laparotomy was done. A mass of purulent omentum and gnarled intestine was found low in the midline. The omentum was removed between paired clamps, and four or five loops of intestine were freed during the process. The right iliac fossa was explored and an acutely inflamed and markedly thickened appendix was found and removed. After the operation the patient remained well for several months, but later showed signs of intestinal obstruction. At operation an abscess containing approximately 10 cc. of pus surrounded a perforation in the intestine which was held to the posterior wall by a "nubbin" of tissue. Examination of the specimen removed showed it to consist of a segment of intestine the mucosa pattern of which was like that of the ileum. Heterotopic pancreas was seen in the wall of the intestine infiltrating the submucosal and muscular layers. The intestine and pancreas were both involved in scar and granulation tissue and were infiltrated with polymorphonuclear leukocytes and lymphocytes. Large pancreatic ducts were seen to be dilated as in obstruction. It is probable that the pancreatic ducts became blocked and that resulting cysts became secondarily infected to effect a coalescent abscess which caused both the ileac perforation and the obstruction.

Rupture of Vagina.—Diddle reports 2 women who sustained rupture of the vaginal vault during coitus. Including these 2 cases 133 major tears of the major vault resulting from coitus have been recorded in the past seventy-six years. Thirty-four subjects were previously virginal; 13 were patients having first sexual contact since delivery; 1 woman was pregnant, 8 were postmenopausal and 6 were having the first sexual contact subsequent to some gynecologic operation. Thus friability of tissues incidental to pregnancy and puerperium was etiologically involved in certain women. Two thirds of the tears involved the posterior wall or fornix and only four the anterior wall. Parametrial extension occurred twenty-one times. The peritoneum was exposed thirty times but was broken only six times. Four of these were in girls under the age of 12 years. The rectum was torn in 7, the bladder in 1. Eight incorrect diagnoses were made. They included abortion, carcinoma of the uterus and functional bleeding. Surgical repair was mentioned in 18 instances and tamponade in 20. Twenty-two of 133 patients died. Five of the 22 were young girls not fully mature, and 2 patients were postmenopausal. Seven died of sepsis and 2 of shock due to hemorrhage. Whether sepsis or shock accounted for the remaining mortalities was not ascertained. When vaginal tears involve the upper portion of the organ they may be overlooked because of inadequate visualization. The discussion emphasizes the value and the necessity of examination with a speculum.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

23:69-148 (June) 1948

Studies in Prematurity: Part 4, Development and Progress of Prematurely Born Child in Pre-School Period. C. M. Drillien.—p. 69.
Cause of Nuclear Jaundice in Neonatal Sepsis with Jaundice. J. I. De Bruyne and S. V. Creveld.—p. 84.
Cause and Significance of Seasonal Variations in Hemorrhagic Tendency in Newborn. E. Kerpel-Gronius, F. Varga and E. K. Pál.—p. 87.
Epidemic of Glandular Fever. F. R. Buckler.—p. 90.
Place of Oral Penicillin in Pediatrics. J. H. Mosely.—p. 93.
Amino Acids in Feeding of Infants. J. M. Smellie.—p. 98.
Septicemia of the Newborn: Clinical Study of 15 Cases. R. M. Todd.—p. 102.
Study of Neonatal Infections in Nurseries of Maternity Hospital. Muriel J. L. Frazer.—p. 107.
Occurrence of Edema in Infantile Gastro-Enteritis. J. Berkeley.—p. 114.
Giardia Lamblia: Incidence and Results of Infestation of Children in Residential Nurseries. E. H. Brown.—p. 119.
*Erb's Palsy. B. Wolman.—p. 129.

Erb's Palsy.—The term Erb's palsy is applied to that type of birth palsy in which the paralysis, or paresis, is confined to muscles supplied by the fifth and sixth cervical nerves. The deltoid, supraspinatus, infraspinatus, teres minor, biceps, brachialis, brachioradialis and supinator muscles are usually involved in cases of severe disease, whereas in cases of mild disease only some of these muscles are involved. Wolman reviewed the cases seen at the outpatients' department of a busy provincial teaching hospital during the last twenty-one years. Actually 125 persons with Erb's palsy presented themselves during that time, but the author has only been successful in tracing and interviewing 37 of this group. Injury at birth to the supraclavicular portion of the brachial plexus is the accepted cause of the condition. Skilled obstetric technic in delivery, particularly in the use of forceps, is the main factor in avoiding this paralysis. Large babies are more likely to be injured. A large child in a primigravida needs special care with the delivery of the head and arms. Treatment must be carried out from birth. Infants treated within the first month do well and results are 100 per cent successful. If treatment is delayed, contractures causing impaired function of the shoulder and elbow will develop quickly. The treatment consisted of adequate splintage, associated with massage, together with exercises in older children.

Brain, London

71:1-108 (March) 1948

*Microgliomatosis: Form of Reticulosis Affecting Brain. A. H. E. Marshall and F. B. Smith.—p. 1.
Gustatory Sweating. H. A. Haxton.—p. 16.
Influence of Alterations in Posture of Limbs on Cortically Induced Movements. E. Gellhorn.—p. 26.
Observations on Cutaneous Hyperalgesia, with Notes on Related Reactions. R. A. Harpman.—p. 34.
Central Mechanism of Some Optic Reactions. G. G. J. Rademaker and J. W. G. Ter Braak.—p. 48.
Electroencephalography with Pharyngeal Electrodes. J. Roubicek and D. Hill.—p. 77.
Distribution of Sympathetic Fibers in Brachial Plexus in Man. S. Sunderland.—p. 88.

Microgliomatosis.—Russell and her associates point out that Hortega and others have shown that the microglia represents the reticuloendothelial system in the central nervous tissue. The authors present a series of 7 cases of cerebral tumor in which the proliferating cells were predominantly of the microglial type. In 3 cases the cerebral tumors were associated with lesions of similar structure in other organs. It is considered that the character of the lesions in the brain and other organs justifies the classification of the condition as reticulosis. The authors cite a number of reports from the literature in which tumors are described which were similar to those in this series. It has been stated by some authors that tumors described as microgliomas are either gliomas or sarcomas, infiltrated by microglial cells. Such a view is untenable in the face of the evidence provided by the cases reported here. First, the existence of two tumors in which the great majority of the cells appeared to be impregnated and which showed proliferation of mature microglial cells at a distance from the main tumor; secondly, the presence in 3 cases of similar lesions in the spleen, lymph nodes and other tissues, and, thirdly, the gradation of intensity in the silver staining of the proliferating cells provide convincing evidence that these specimens are tumors of reticuloendothelial elements.

British Journal of Cancer, London

2:1-86 (March) 1948

Secondary Malignant Disease of Heart. R. W. Raven.—p. 1.
*Prognosis of Carcinoma of Breast in Relation to Type of Operation Performed. D. H. Patey and W. H. Dyson.—p. 7.
Excretion of 17-Kestoteroids in Men of Different Age-Groups, with Special Reference to Prostatic Cancer. A. M. Robinson.—p. 13.
Effects of Chloroethylamines on Tumors, with Special Reference to Bronchogenic Carcinoma. E. Boyland, J. W. Clegg, P. C. Koller and others.—p. 17.
Culture of Human Leukemic Blood Cells in Vitro. F. W. Gunz.—p. 29.
Incidence of Carcinoma in Transmissible Papillomatosis of Domestic Rabbit. F. R. Selbie and R. H. M. Robinson.—p. 48.
Observations on Nature of Estrous Cycle and on Effect on it of Milk Factor, in Mice of Two Inbred Strains, Differing in Mammary Cancer Incidence. E. C. Armstrong.—p. 59.
Biologic Tests with Cholesterol Esters of Unsaturated Acids. A. H. M. Kirby.—p. 70.
Factors Determining Action of Colchicine on Tumor Growth. R. J. Ludford.—p. 75.

Prognosis in Carcinoma of Breast.—Patey and Dyson compare the results of different combinations of surgical and irradiation treatment of carcinoma of the breast in a series of 118 patients treated between 1939 and 1943, and followed up until the end of 1946. He concludes that until an efficient general agent for the treatment of carcinoma of the breast is developed, a high proportion of patients are doomed to die of the disease whatever combination of surgical treatment and irradiation is used, because in a high proportion of cases the disease has passed outside the field of local attack when the patient first comes for treatment. A modified radical operation in which the pectoralis major is preserved shows results as good as those of the standard radical operation, and in addition has positive advantages. Wider sacrifice of skin with subsequent skin grafting is desirable to reduce the incidence of local cutaneous recurrences, which is still disconcertingly high. Partial mastectomy combined with axillary dissection may be justifiable in occasional early cases with small growths, but is unjustifiable as a routine, owing to the danger of local recurrence. Simple mastectomy combined with irradiation to the axilla may give a satisfactory result, but the irradiation is generally more upsetting to the patient than surgical dissection of the axilla.

British Journal of Venereal Diseases, London

24:45-88 (June) 1948

Treatment of Early Syphilis with Penicillin, Neoarsphenamine and Bismuth. G. L. M. McElligott, F. J. G. Jefferiss and R. R. Willcox.—p. 45.
*Significance of Pleuropneumonia-like or "L" Organisms in Non-Gonococcal Urethritis, Reiter's Disease, and Abacterial Pyuria. A. H. Harkness and A. Henderson-Begg.—p. 50.
Psychological Aspects of Venereal Disease. E. D. Wittkower.—p. 59.
Laboratory Aspects of Sexual Crime. H. S. Holden.—p. 68.
Laughlen Test with Particular Reference to Its Suitability as Preliminary Screen Test. B. R. Sandiford and Antoinette M. Khal.—p. 72.

Pleuropneumonia-like Organisms in Nongonococcic Urethritis.—Harkness and Henderson-Begg say that a number of organisms of the same group, usually referred to as pleuropneumonia-like or "L" organisms, have been described as causing arthritis, abscesses, pneumonia, "rolling disease" and other diseases. In recent years organisms of the group have been identified in the urogenital tracts of both men and women. The authors attempted to correlate the findings of pleuropneumonia-like or "L" organisms on culture with the different types of nongonococcic urethritis. Pleuropneumonia-like organisms have been cultured from 21 of 57 cases of subacute abacterial urethritis and from 5 of 10 cases of acute abacterial urethritis. "L" organisms were cultivated from urethral washings in 7 of 41 cases of arthritis complicating abacterial urethritis (so-called Reiter's disease). All cultures of joint fluid, blood, conjunctival secretion or cutaneous lesions were negative. "L" organisms were recovered from 2 of 74 cases of bacterial urethritis (nongonococcic), 2 of 16 cases of abacterial pyuria, 12 of 46 cases of nongonococcic cervicitis or vaginitis and 15 of 157 cases of acute gonorrhea. Fifty normal males and 15 normal females were also examined, but in no case were "L" organisms recovered. Serologic investigations—agglutination and complement fixation—carried out on all suitable cases at varying stages of the disease were invariably negative in result. Thus, although evidence from cultures has favored the view that "L" organisms are etiologically related to certain types of abacterial urethritis, abacterial pyuria and possibly Reiter's syndrome, serologic tests have not supported this conclusion. Negative serologic reactions, however, cannot be regarded as strong evidence against the incrimination of "L" organisms in the causation of these diseases.

. British Medical Journal, London

1:1121-1166 (June 12) 1948

*Pulmonary Valvulotomy for Relief of Congenital Pulmonary Stenosis: Report of 3 Cases. R. C. Brock.—p. 1121.
BCG Vaccination: Is It of Any Value in Control of Tuberculosis? A. Wallgren.—p. 1126.
*Efficacy of BCG Vaccination. H. Malmros.—p. 1129.
Exposure to D.D.T. A. Anderson and M. A. Khorram.—p. 1132.
Traumatic Pseudo-Cyst of Pancreas with Pleural Effusion: Report of 2 Cases. B. J. Bickford.—p. 1134.
Balanced-Pulsed Galvanism: Application of New Principle Avoiding Ionization Effects. C. E. G. Wickham.—p. 1136.

Valvulotomy for Congenital Pulmonary Stenosis.—The immediate results of the Blalock-Taussig operation can be dramatically successful, but two possible drawbacks suggest themselves: (1) that the fistulous communication may not grow with the child and thus will prove ineffective in later years; (2) that an arteriovenous leak or artificial ductus arteriosus is created—a condition for the relief of which, when it occurs as a congenital maldevelopment, an operation has been considered necessary. The relief of the obstruction itself would answer the greatest objection: An increased supply of blood would be provided to the lungs without the disadvantages of an arteriovenous leak. It is usually stated that the stenosis in these cases is almost invariably subvalvular or infundibular and is therefore not amenable to relief. This is not so; a number of patients with Fallot's tetralogy have valvular stenosis either with or without subvalvular stenosis; moreover, cases of morbus caeruleus occur in which a pure pulmonary valvular stenosis is present. The best way to assess the state of the valves is to inspect them under direct vision. The author describes 3 cases which show that pulmonary valvulotomy is a feasible operation, and all 3 patients have survived the procedure. The result in the first has been moderately successful so far; in the second the result is good; in the third it would appear to be good, but is as yet indeterminate functionally. The ages of the patients were 18, 11 and 23 years, respectively. Thus 2 patients were of an age when the prognosis is ordinarily poor. Far better results are to be anticipated in younger patients. The vascular complications are disturbing. The first case teaches that a careful watch must be kept for signs of peripheral arterial embolism after cardiotomy so that immediate embolectomy can be considered. Arterial thrombosis occurs also with the Blalock operation. Presumably it is most likely to occur when the blood pressure falls, especially in the presence of polycythemia. Much still remains to be done in the treatment of "blue children" with pulmonary stenosis, but the results are encouraging enough to justify proceeding further. This operation is not meant to supplant the Blalock operation. It is of use in only a small proportion of cases. Until a method can be found to relieve the subvalvular stenosis, the Blalock operation must continue to take precedence.

Efficacy of BCG Vaccination.—Malmros points out that last year hundreds of thousands of young children and adolescents in war-ravaged Europe were given tuberculin tests and that the nonreactors were vaccinated against tuberculosis with BCG. The statistically most trustworthy method of determining efficacy, that of vaccinating alternating patients, had to be abandoned in Scandinavia. In the author's district of Oerebro, Sweden, which has about 230,000 inhabitants, vaccination with BCG has been done extensively since 1942. Practically all the newborn are vaccinated. The whole population is gradually tuberculin-tested and the nonreactors are vaccinated if they give their consent. So far, 22,413 persons have been vaccinated, 8,040 being newborn infants, 7,836 children over 1 year, and 6,537 adults. When a patient is admitted to any hospital with the diagnosis of tuberculosis or suspected tuberculosis it is ascertained whether the patient has been vaccinated with BCG. By this means it is possible to find out whether any of those vaccinated have contracted tuberculosis. From 1942 to 1947 only 1 such case was discovered. The harmlessness of BCG is established beyond doubt. If Wallgren's method is used and the vaccine in a dose of 0.05 mg. is injected strictly intracutaneously, large abscesses seldom appear (0.8 per cent). Small abscesses occur in about 7.8 per cent. They heal relatively quickly. In newborn infants abscesses occur much more rarely (2.3 per cent) than in older children and in adults. The author states that the BCG campaign should not be confined to the newborn, but that whenever a nonreactor is encountered he ought to be vaccinated.

1:1167-1220 (June 19) 1948

*Lymphatic Connections of Subarachnoid Space: Experimental Study of Dispersion of Particulate Matter in Cerebrospinal Fluid, with Special Reference to Pathogenesis of Poliomyelitis. E. J. Field and J. B. Brierley.—p. 1167.
*Epidemiology of the 1947 Outbreak of Poliomyelitis in Eccles. W. P. Sweetnam.—p. 1172.
Ecology of Poliomyelitis in a Military Camp in 1947. G. J. Dixon.—p. 1175.
Aberrant Endometrial Tissue and Intussusception. E. M. Southern.—p. 1178.
*Neonatal Bact. Coli Meningitis After Prolonged Labor. H. R. Duval and J. T. Burrowes.—p. 1180.
Cervical Sympathetic Paralysis. J. D. Craig and R. C. Fuller.—p. 1182.
Day Nurseries and the Man-Power Problem. W. E. Cavenagh.—p. 1184.

Lymphatic Connections in Subarachnoid Space.—Field and Brierley say that suggestions have been made that infective agents, particularly the virus of poliomyelitis, may extend to the central nervous system along certain ill defined lymphatic pathways. The elucidation of direct anatomic pathways, particularly those between the spinal subarachnoid space and the abdominal lymphatic system, is taken up in this paper. After an outline of the salient features that have been presented in the literature, experiments on rabbits are described. Diagrams illustrate the mode of elimination of india ink particles from the subarachnoid cul-de-sac around the dorsal root ganglion of a spinal nerve; also from the subarachnoid extensions along the olfactory nerves. In both cases ink particles are eliminated from the subarachnoid space into interstitial tissue and pass secondarily into the lymphatic system. The nasopharynx, tonsil and upper respiratory tract have all been implicated from time to time as portals of entry for virus. The results presented here have substantiated the existence of a definite anatomic pathway (in the rabbit) between the cranial subarachnoid space and the deep cervical lymph nodes by means of lymphatics which emerge through the jugular foramen. Since the tonsil, too, is connected with these nodes, the anatomic basis exists for lymphatic extension of virus from tonsil to cranial subarachnoid space. This connection is in addition to the more readily demonstrable paths from the nasal mucosa. The author also describes retrograde lymphatic flow to the cord. The prevertebral lymph nodes are the "regional" nodes of the spinal subarachnoid space. The presence of virus in the cerebrospinal fluid in human and experimental poliomyelitis would seem to be uncommon. In view of the rapidity with which particulate matter has been shown to be eliminated from the subarachnoid space, it is probable that reports in the literature are concerned with stages when virus, which has been present earlier, has already been eliminated. The distribution of fine particulate matter in the cerebrospinal fluid has been compared with that of the early lesions of poliomyelitis, and certain similarities have been noted suggesting that the fluid may play a more important part in the pathogenesis of the condition than that usually accorded it by adherents of the theory of neuronic transmission.

Epidemiology of Poliomyelitis Outbreak.—Sweetnam presents studies carried out in the course of an outbreak of poliomyelitis in Eccles in 1947. This borough had the highest attack rate of any district. There were 46 cases, giving an attack rate of 1.09 per thousand of the population. The case mortality was 6.5 per cent. The incubation period was seven to thirteen days. Only one family had more than 1 frank case. There was only 1 instance of a case to case contact. The epidemic was confined for nearly six weeks to the western half of the borough by a canal which restricted communications.

The results of field studies indicated that the chief factor in the spread of infection was human contact, in which abortive cases and healthy carriers played the major part. The presence of the virus in the nasopharynx of patients and carriers was of much more importance for the spread of infection than was its presence in feces A survey revealed the presence of numerous abortive cases, especially in close proximity to frank cases, and suggested that of every 20 cases in which clinical signs and symptoms of infection were evident less than one developed into a paralytic case. Suggestions to improve the present system of notification are made, particularly the necessity for notifying abortive cases.

Neonatal Meningitis Due to Escherichia Coli.—According to Duval and Burrowes meningitis due to Escherichia coli is relatively more common in the newborn than in childhood or later life. The original portal of entry is difficult to determine, but there are indications that infection may enter at any of many sites. The following portals of entry have been mentioned: middle ear, intestine, lungs, genitourinary tract, spina bifida, umbilicus and morbid conditions of skin, scalp, mucosae and subcutaneous tissues. In addition, transplacental bacteremia, possibly arising from maternal pyelitis, has been suggested. Aspiration of amniotic fluid infected with Esch. coli, causing bronchopneumonia followed by spread through the blood stream to the meninges, has also been suggested as a portal of entry and seems to have been the route of infection in the fatal case reported here. The infant was 3 days old. The mother had intrapartum eclampsia and prolonged labor and on the third day of the puerperium contracted pyelitis due to Esch. coli and endometritis.

Journal of Tropical Medicine and Hygiene, London

51:111-132 (June) 1948

Prognosis in Schistosomiasis. M. Gelfand.—p. 112.
Studies in Tropical Ulcer: Part IV. Treatment of Tropical Ulcer. K. Hare.—p. 119.
Normal Lobular Neutrophil Picture in East African. K. E. Dewhurst.—p. 128.

Lancet, London

1:893-932 (June 12) 1948

*Control of Infection in Burns. L. Colebrook, J. M. Duncan and W. P. D. Ross.—p. 893.
Supernumerary Nipples and Neurosis. R. Harper.—p. 899.
Susceptibility to Cholera. S. Abdou.—p. 903.
Closing the Pneumonectomy Gap. G. S. Eedy.—p. 905.
Elliptical Human Erythrocytes in Egyptian Family. S. E. Kholy.—p. 908.
Partial Coarctation of Aorta with Bacterial Endocarditis and Bicuspid Aortic Valve. J. Bates and R. J. W. Rees.—p. 908.

Control of Infection in Burns.—Colebrook says that at the Birmingham Accident Hospital an attempt has been made to treat burns under conditions which aim at eliminating not only the "contact" infections (from hands, instruments), but also air-borne infections. Most of the sepsis of burns is due to infection in the hospital and can be prevented if the right conditions and the appropriate routine are established. Two distinct objectives have to be kept in view: (1) blocking the transmission of pathogens to the burns at the time of the dressing, and (2) blocking their transmission to the burns between one dressing and the next. The first of these objectives has been successfully attained during the three year period in the burns unit at the Birmingham Accident Hospital (734 patients treated) by having all dressings done by a trained team using a strict aseptic technic in a room ventilated by an abundant stream of filtered air. The number of patients infected with hemolytic streptococcus and pyocyanea at the time of dressing under these conditions has been less than 1 per cent. The second objective has proved much more difficult. The majority of the infections transmitted between one dressing and the next occurred in patients whose burns were difficult (or impossible) to cover adequately with dressings, or in patients who interfered with their dressings. When dressings become soaked with serous exudate during the first few days after burning, pathogens conveyed to the outer bandages from the air or from bedding are able to "grow through" the dressing and so infect the burned surfaces. The use of cellophane as a bacterial barrier to prevent this is suggested. Streptococcic infections have proved the easiest to control because they can be quickly eliminated from the burns by local application of penicillin (or of sulfonamide compounds). In view of the manifold opportunities for cross infections presented by a large ward and the highly infectable nature of burns, it is concluded that the best way to maintain a high level of freedom from hospital infection would be to nurse all burns during the first few weeks in well ventilated cubicles, each containing a single bed.

1:933-972 (June 19) 1948

Geographic Origin of Nurses. B. Woolf.—p. 933.
*Repair of Large Hernia with Tantalum Gauze: Experimental and Clinical Story. D. M. Douglas.—p. 936.
Leukemia Presenting with Neurologic Manifestations. W. R. Gauld.—p. 939.
Homologous Serum Hepatitis: Review of 216 Cases. D. Borensztein.—p. 941.
Chorionepithelioma Treated with Stilbestrol. S. Kullander.—p. 944.
Poliomyelitis and Associated Minor Illness in Residential School. J. C. Ryle.—p. 945.
Gangrene Following Intra-Arterial Injection of Myanesin with Study of Blood and Myanesin Mixtures. T. A. Ogilvie, J. B. Penfold and D. R. T. Clendon.—p. 497.
*Multiple Streptococcal Abscesses of Liver: Recovery with Penicillin. H. S. Morley.—p. 949.

Repair of Large Hernias with Tantalum Gauze.—Douglas describes reactions in rabbits in which sutures of tantalum, stainless steel, "inconel" (composed of 80 per cent nickel, 13 per cent chromium and 7 per cent iron), silver, black silk and surgical gut were implanted in the abdominal wall. It was found difficult to compare the tissue reactions to various suture materials because of the variation in response from animal to animal. Sutures of tantalum, stainless steel and "inconel" are associated with less tissue reaction than those of silk or of silver. The tantalum gauze which Douglas investigated was woven from tantalum wire of a diameter of 0.075 mm. It is sufficiently pliable to adapt itself to the movements of the abdominal wall. Segments of tantalum gauze were substituted for the whole thickness of the abdominal wall of rabbits and the repair was examined after 175 to 375 days. When an attempt was made to dissect the gauze from the abdominal wall, it became evident that the connective tissue fasciculi had grown through the meshes of the gauze. The tantalum gauze was used also in the repair of 32 large hernias in patients. These patients appear to have more pain in the first few postoperative days than do those who have had other types of repair. This may be due to the extensive dissection needed to obtain an adequate overlap. Of the 32 wounds, 3 became infected, whereas the others healed by primary union. The infected wounds all healed satisfactorily. One of the patients died of cerebral thrombosis three months after operation. All the other patients are in good health and have no complaints referable to the operation. The scars are soundly healed, soft and mobile, and the hernia has not recurred.

Penicillin in Multiple Streptococcic Abscesses of Liver.—Morley presents the case of a woman, aged 56, whose symptoms were considered as indicative of an anterior subphrenic abscess. At operation an enlarged liver presented itself, with surface studded with yellow raised areas, the mass felt being one of these. Aspiration yielded creamy pus which contained large numbers of streptococci. Penicillin, 100,000 units, was given forthwith, and thereafter 60,000 units every three hours for eleven days to a total dose of 4,060,000 units. On the third day of penicillin therapy temperature reached normal. The patient's general condition improved with unexpected rapidity, her pain subsided and her recovery was uneventful. Her doctor reported five months later that she was in perfect health.

Medical Journal of Australia, Sydney

1:665-696 (May 29) 1948

Goiter Studies: II. Relationship of Endemic Goiter to Food Consumption Pattern of Families. Anita Osmond and F. W. Clements.—p. 665.
Iso-Agglutinins in Cord Blood. Rachel Jakobowicz and Lucy M. Bryce.—p. 669.

1:697-724 (June 5) 1948

Technic of Aspiration Biopsy of Liver with Reference to Its Use in Diagnosis and Prognosis. W. E. King and J. W. Perry.—p. 697.
Some Aspects of Cholelithiasis and Obstructive Jaundice. I. J. Wood, W. E. King, P. J. Parsons and others.—p. 701.

Acta Clinica Belgica, Brussels

3:115-226 (March-April) 1948. Partial Index

Extrapleural Pneumothorax in Surgical Treatment of Pulmonary Tuberculosis. M. Berard and A. Duprez.—p. 117.
*Nitrogen Mustard in Treatment of Hodgkin's Disease, Polycythemia Vera and Myelomatosis. K. Iversen and K. Kjerulf-Jensen.—p. 138.
*Clinical Study of Treatment of Subacute Endocarditis. F. van Goidsenhoven and P. de Moor.—p. 151.
Encephalitis Caused by Vaccination in an Adult: Complete Cure After 21 Days of Coma. P. Govaerts.—p. 167.

Nitrogen Mustards in Hodgkin's and Other Diseases.—Iversen and Kjerulf-Jensen review observations on 21 patients who were treated with methyl-bis-(beta-chloroethyl)-amine-hydrochloride. The results were excellent in 6 cases of polycythemia vera. In 3 cases of multiple myeloma pain decreased, while in 5 of 9 patients with Hodgkin's disease symptoms were relieved, although this effect was only temporary.

Treatment of Subacute Endocarditis.—Seventeen patients with subacute bacterial endocarditis were treated by van Goidsenhoven and de Moor between September 1944 and June 1947 with penicillin alone or in combination with other therapeutic measures. As of Jan. 1, 1948, 12 of these patients are alive; 8 of these have completely recovered without signs of cardiac failure; in 3 the cardiac function has deteriorated more and 1 shows severe cardiac failure but no signs of infection. For 2 of the 5 patients who died, the treatment was not sufficient, because of the shortness of the supply of penicillin (in the period 1944-1945); in 1 case the treatment started too late (after one hundred and thirty weeks' evolution). The last 2 cases proved refractory to a normally adequate treatment. The authors propose as a routine treatment: for the first two days twelve to sixteen times 100,000 or 200,000 units of penicillin in twenty-four hours; for a period of four weeks eight times 100,000 units of penicillin per day and, finally, a two week period with eight times 50,000 units per day. If symptoms of infection do not disappear with this treatment and the blood cultures still remain positive, the therapeutic plan has to be completely modified. The doses will then be based only on the in vitro sensitivity of the isolated germs and on the penicillin levels in plasma.

Archivos Inst. de Cardiología de Mexico

18:345-450 (July 31) 1948. Partial Index

*Diastolic Extra-Sounds and Gallop Rhythm: Graphic Characteristics, Frequence, Clinical Importance and Audibility in Normal Persons and Cardiac Patients. A. A. Luisada and M. Roitman.—p. 345.

Diastolic Adventitious Sounds and Gallop Rhythm.—Luisada and Roitman studied 111 phonographic tracings of 90 persons, either normal or with cardiac disease, at the Instituto de Cardiología of Mexico. Adventitious sounds were encountered in 72 per cent of normal persons and in 52 per cent of patients with cardiac disease. Gallop rhythm was found in 28 per cent of the former and in 48 per cent of the patients with cardiac disease. Having found that no single criterion is sufficient for differentiation of adventitious sounds from gallop, they established the following arbitrary rule as a result of the study: (*a*) A vibration having a frequency of 30 or more per second was called gallop whatever its height. In almost all such cases the height was found to be two thirds or more that of the normal heart sounds. (*b*) A vibration having a frequency of less than 30 per second was considered a gallop only if its height was greater than two thirds of that of the normal heart sounds. (*c*) A vibration having a frequency of less than 30 per second and a height lower than two thirds of that of the normal heart sounds was considered as an adventitious sound. Comparison between clinical auscultation and phonocardiographic findings reveals that no relation exists between them. The multiple causes of error inherent in clinical auscultation emphasize the importance of phonocardiography. While adventitious sounds and gallop rhythm are more frequent in cardiac patients than in normal persons, they may be found occasionally in the latter, as their production is favored by functional elements which may be present in the absence of heart disease and among which tachycardia is one of the most common. The phonocardiographic classification proposed does not separate physiologic from pathologic cases even though it facilitates grading of the severity of the functional disorder of the heart. There are gallops which are inaudible, and their detection by phonocardiography is important for complete evaluation of the clinical data.

Helvetica Medica Acta, Basel

15:223-318 (June) 1948. Partial Index

*Pathogenesis and Etiology of Evanescent Pulmonary Infiltrations with Blood Eosinophilia (Löffler's Syndrome). W. Löffler, A. F. Essellier and M. E. Macedo.—p. 223.
Influence of Liver on Synthesis of Lipoproteins in Blood. F. Reubi.—p. 262.
Action of Embryonal Liver Extract on Normal Antibodies. L. Goreczky and I. Csefkó.—p. 281.
*Influence of Temperature on Takata Reaction. H. Baur.—p. 285.
Coagulation Defect of Hemophilic Blood. W. Meier.—p. 304.

Pathogenesis of Löffler's Syndrome.—A review of the literature convinced Löffler and his associates that so far no indisputable proof has been furnished that ascariasis is the cause of the evanescent pulmonary infiltrates with eosinophilia first described by Löffler in 1932. A number of investigators, including Löffler, found that it is a causal factor in some of the cases. In this report the authors describe animal experiments which were designed to clarify the question regarding the causal significance of ascariasis. A total of 48 guinea pigs was used in two experiments. It was possible to reproduce in every detail the syndrome of evanescent pulmonary infiltration with eosinophilia, and it was possible to corroborate the observations of other research workers. The authors were able to demonstrate the larvae of Ascaris in eosinophilic infiltrations. Their pathologic observations confirm the observations made by von Meyenburg and Nagel in human subjects. The authors direct particular attention to the hitherto ignored atelectasis, which is important in the pathogenesis of the evanescent pulmonary changes. They also stress that the localization of the eosinophilic infiltrations does not permit conclusions regarding the portal of entry or the nature of the causal agent.

Cold Temperature and Takata Reaction.—The observation that the Takata reaction was more frequently positive during the cold season induced Baur to study this reaction under refrigerator temperatures (average of plus 3 C.). It was found that cooling healthy subjects or their blood for a short time had no influence on the outcome of the reaction. In cases of parenchymal disease of the liver verified at necropsy the Takata reaction was occasionally negative when the test was done at room temperature, but became positive when it was done at refrigerator temperature. Furthermore, in the course of hepatic disease the "cold" Takata reaction becomes positive sooner and remains so longer than if the test is done at room temperature.

Helvetica Paediatrica Acta, Basel

3:167-252 (July) 1948

Achylic Chloranemia During Childhood (Essential Hypochromic Iron Deficiency Anemia with Achlorhydria). C. Gasser.—p. 167.
Isolated Case of Pleonosteosis Léri. H. Zellweger.—p. 199.
Two Cases of Dysostosis Morquio (Differentiation from Dysostosis Multiplex). H. Zellweger and M. Schaichet.—p. 208.
Acute Infectious Lymphocytosis (Institutional Epidemic in Children). E. Martens.—p. 220.
Lymphoblastoma of Small Intestine in Child of 4 Years. F. Thélin and J. de Rougemont.—p. 225.
*Urethane in Treatment of Acute Leukemia in Childhood. R. F. Landolt.—p. 232.

Urethane in Leukemia of Children.—Landolt reports studies on 16 children who ranged in age up to 11 years, and who had acute leukemia. The children were treated with urethane, which is an ethyl ester of carbamic acid. The substance was given orally or by rectum in doses of 1 to 3 Gm. per day. Except for isolated cases of vomiting, there were no unpleasant secondary effects. The leukocyte count dropped to 500 or less within from five to ten days. The proportion of neutrophils rose considerably in some cases, but only rarely would a small absolute increase be shown. Increased erythropoiesis in the bone marrow was noted in 5 of the children; in 4 of these it was slight and in 1 great. There seemed to be an increase in the number of mitoses under the influence of the urethane. The swelling of the liver, spleen and lymph nodes decreased in 10 of the patients, in some of them decidedly, and there was a simultaneous improvement in the general condition. The favorable effect on the clinical state was only temporary. In one patient all leukemic changes subsided and panhemocytophthisis developed. Four other cases showed the same tendency, without, however, reaching a point where complete regression of the extramedullary leukemic foci occurred. Urethane apparently can damage erythropoiesis and thrombopoiesis. Urethane therapy can be recommended in acute leukemia, since improvement can take place, but it is necessary to check the blood picture so that the preparation can be discontinued before panhemocytophthisis sets in. The author recommends simultaneous employment of penicillin, in order to prevent infection, and advises frequent blood transfusions to counteract the development of panhemocytophthisis.

Journal de Médecine de Lyon

29:453-490 (July 5) 1948. Partial Index

*Statistics of Infectious Endocarditis Treated with Antibiotics (Penicillin and Streptomycin). P. Sédallian, P. Monnet, M. Vialtel and R. Maral. —p. 453.

*Acute Miliary Tuberculosis Treated with Streptomycin. P. Sédallian, J. Moinecourt, M. Vialtel, R. Maral and others.—p. 461.

Antibiotics in Infectious Endocarditis.—Sédallian and his co-workers treated 24 patients with infectious endocarditis by intramuscular administration of penicillin and treated 6 additional penicillin-resistant patients with streptomycin. Eighteen patients recovered and there were 12 failures including 11 deaths and 1 patient whom the persistent infection induced to leave the hospital. Pending laboratory results, treatment should be instituted with large doses of penicillin (1,000,000 to 1,500,000 Oxford units). In cases with negative laboratory results the same high doses should be employed for at least ten to fifteen days, and then should be reduced according to the improvement obtained. The dose should be based on the results of the laboratory tests; it should insure a blood level three or four times superior to that of the microbic resistance. Duration of the treatment depends on the symptoms and their clinical evaluation. In 7 of 8 patients with negative blood culture the treatment failed, but 3 of 4 in whom penicillin was ineffective recovered when streptomycin was given. Penicillin was effective in 13 of 15 patients with Streptococcus viridans. A temporary resistance to penicillin subsided in some of these cases after temporary discontinuation of the drug: with this method the prospects are better than when progressive doses are employed, which will only exaggerate the resistance to the drug. Penicillin was ineffective in 3 cases with Enterococcus, but in 1 of them recovery was obtained with streptomycin. Synergistic action of penicillin and streptomycin was not apparent in any of the authors' cases. Streptomycin is indicated for cases in which an acquired resistance to penicillin is due to insufficient treatment.

Streptomycin in Miliary Tuberculosis.—Sédallian and his co-workers treated 49 patients with miliary tuberculosis with streptomycin. None of them presented any meningeal symptoms on admission to the hospital. In 17 the disease was severe, with high grade fever, dyspnea and cyanosis. Twenty patients had fever of long duration without pronounced functional symptoms. Twelve patients had afebrile miliary tuberculosis or were running a temperature around 38 C. (100.4 F.). Thirteen patients had genitourinary lesions; 9 had laryngeal lesions, and 26 had pulmonary lesions. Results showed that the patients remained tuberculous and the course of their disease differed according to its localization, as it did before streptomycin was instituted: the genital lesions showed a tendency to total or subtotal regression, particularly in women; the pulmonary lesions showed a tendency to stabilization, to cavity formation, fibrosis or caseation depending on the case. The streptomycin cicatrized the laryngeal lesions, reduced the pulmonary congestion or perifocal inflammation and was responsible for the disappearance of the minute tubercles in the roentgenograms. Koch's bacilli did not disappear; their caseating and fibrotic effect was not changed. Their behavior seemed to depend on the normal reaction of the various tissues. The disappearance of the minute tubercles in the roentgenograms is only an episode in this diffuse hematogenous disease which threatens the meninges. Proper dosage and continued treatment for three to four months may be life saving in those cases in which the meninges were not yet involved when treatment was instituted. Early symptoms must be watched for, and ophthalmologic signs are of great importance because lumbar puncture is not without risk.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

92:1365-1436 (May 8) 1948. Partial Index

Modern Hearing Aids. W. J. Pothoven.—p. 1375.

Simplified Determination of Acetone in Urine According to Rabinowitch. E. Sangster.—p. 1379.

*Is it Advisable to Treat Tonsillitis with Sulfonamides? H. A. Voet. —p. 1380.

*Uremia as Result of Sodium Chloride Deficiency in Pregnancy and Puerperium. G. A. Lindeboom.—p. 1384.

Advisability of Sulfonamide Drugs in Tonsillitis.—Voet compared two groups of patients with tonsillitis, one of which had been treated before the time sulfonamide drugs were generally used and the other was treated with sulfonamide drugs. No shortening of the duration of the disease or of the fever could be noted in the patients who had been treated with sulfonamide compounds. The author warns against routine chemotherapy in patients with tonsillitis, for not only is there a danger that toxic effects and hypersensitivity might develop, but the bacilli may become resistant to chemotherapy, and thus the sulfonamide compounds may lose their effectiveness.

Uremia After Salt-Deficient Diet in Pregnancy.—Salt-free or salt-deficient diet is often prescribed for pregnant women, particularly if edema or increase in blood pressure suggests a possible renal defect. The author presents the histories of 4 women, which indicate that deficiency in sodium chloride may lead to uremia in pregnant or puerperal women. One of these women had been subject to hyperemesis throughout her pregnancy. The other 3, however, had been on a salt-free diet. These cases demonstrate that a salt-free diet, although helpful in some cases, is not entirely without danger, particularly if it is continued over long periods. The renal function becomes impaired by the sodium chloride deficiency and the complete restoration may require months.

Nordisk Medicin, Stockholm

38:1063-1110 (May 28) 1948. Partial Index

*Blood Findings in Juvenile Amaurotic Idiocy. K. v. Bagh and H. Hortling.—p. 1072.

Diphtheria Treated with Serum Containing Antitoxin and Antibacterial Antibodies. A. Kåss.—p. 1076.

Congenital Clubfoot. J. A. Böök.—p. 1080.

Injury to Brachial Plexus Following Anesthesia. K. Liavaag.—p. 1081.

Critical Viewpoints Concerning Palliative Resection in Duodenal Ulcer. S. Lindgren.—p. 1084.

Blood Findings in Juvenile Amaurotic Idiocy.—Blood studies of 6 patients with this disorder revealed abundant vacuole formation in the lymphocytes in cytoplasm otherwise apparently normal. Vacuolated lymphocytes, van Bagh and Hortling state, were fewer in recent cases than in those of longer standing. In the sternal punctate, without other pathologic cell elements, the vacuolated lymphocytes were less numerous than in the peripheral blood. Attempts to stain the vacuoles by different staining methods failed. The vacuoles did not appear in dark ground illumination. The occurrence of highly vacuolated lymphocytes is believed to be significant in the establishment of juvenile amaurotic idiocy. The vacuolation is assumed to be due to a disturbance in the vital function of the mature lymphocytes, possibly dependent on disturbance in lipid metabolism.

38:1211-1246 (June 18) 1948

Pathogenesis of Essential Hypertension. H. Laake.—p. 1211.

Sahli's High Pressure Stasis. T. Friis.—p. 1214.

*Treatment of Cold Feet and Legs After Poliomyelitis. K. Stenport. —p. 1217.

Adrenal Cholesterin and Effect of Testerone on Adrenal Cortex. C. G. Bergstrand.—p. 1219.

Temporary Hypertension After Vagus Resection. J. M. Marcussen. —p. 1222.

Effect of Arteriovenous Anastomosis on Hypertension. H. Fabritius. —p. 1223.

Sensitiveness to Penicillin. H. K. Kristensen.—p. 1224.

Treatment of Cold Feet and Legs After Poliomyelitis.—Stenport says that cold feet and legs, with blue discoloration of the skin, are a frequent sequel of poliomyelitis. Treatment with a vasodilating substance, 2-benzylimidazoline hydrochloride ("vasodil") was carried out in 1944 in a large number of cases and as a rule resulted in a more or less transient sensation of warmth. After preliminary blocking of the second and third lumbar ganglions with 1 per cent procaine hydrochloride showed positive results, sympathectomy of the second and third lumbar ganglions was done in 90 cases from 1945 to 1947 with good primary results both subjectively and objectively. The surgical treatment is reserved for cases with pronounced vasospastic changes in which repeated treatment with the drug is ineffective and in border cases in which this treatment gives only partial relief.

Presse Médicale, Paris

56:469-484 (July 3) 1948

First Trials on Therapeutic Value of Pyroligneous Oil. A. Lemaire, J. Loeper and E. Housset.—p. 469.

Comparative Study of Agglutination Power of Serum and Tuberculin Tests After Vaccination with BCG by Scarifications. R. Sohier. —p. 470.

*Some Problems Involved in Treatment of Abscess of Lungs with Intrabronchial Penicillin. H. Métras, M. Grégoire, J. Lieutier and C. Gaillard.—p. 471.

Intrabronchial Penicillin in Pulmonary Abscess.—Métras and his co-workers treated 60 patients with pulmonary abscess with penicillin by intrabronchial route. In cases of severe disease it was combined with systemic penicillin therapy, 1,000,000 units per day. Recovery from pulmonary abscess may be considered complete (1) with the disappearance of functional symptoms and return to health as demonstrated by bronchography within six months after last subjective symptoms; (2) with mild roentgenologic or bronchographic sequelae within two years after last functional symptoms, and in the absence of hemoptysis and expectoration. Recovery of the first type was obtained in 30 patients and of the second type in 15 patients; i. e., 75 per cent recovered, while 15 patients (25 per cent) failed to recover, 6 because of extrapulmonary causes. The remaining 9 patients had recurrence after penicillin was discontinued; they required pulmonary surgical treatment, which is probably less dangerous after treatment with penicillin. Results of intrabronchial penicillin treatment for pulmonary abscess are superior to those of pneumonotomy reported by Neuhof and Tourrof in 1944.

Semaine des Hôpitaux de Paris

24:1609-1650 (July 2) 1948. Partial Index

*Semeiologic Importance of Electroencephalography in Diagnosis of Epileptic Attacks in Children. L. Cornil, A. Cremieux and H. Gastaut. —p. 1609.

Results and Accidents of Treatment of Certain Types of Tuberculosis with Streptomycin. C. Mattei.—p. 1614.

*Necrotic and Suppurative Forms of Primary Cancer of Lung (Anatomic and Pathogenic Study). R. Poinso, Y. Poursines, J. Charpin and P. Martin.—p. 1618.

*Chemical Pregnancy Test: Determination of Sodium Pregnandiol Glycuronidate. R. Rivoire and G. Bueil.—p. 1634.

Electroencephalography in Diagnosis of Epilepsy in Children.—Cornil and his co-workers made electroencephalograms of 184 children between the ages of 6 and 13 years, 138 of whom had clinical epilepsy, while in 46 the epilepsy was doubtful from the clinical point of view. A typically normal tracing, taking into account the age of the child, furnishes a presumption against the diagnosis of epilepsy, but does not provide definite proof. Positive diagnosis is made in the presence of two conditions: (1) when during rest one observes paroxysmal waves characterized by considerable amplitude, by their rhythmicity and sometimes by their regularity. Jasper's term of "hypersynchronic rhythm" seems to be appropriate because these rhythms are very likely due to an excessive synchronization of the cortical neurons; (2) when one observes a slow dysrhythmia which is incompatible with the age of the patient, in a child with nervous attacks of a definite or nearly definite epileptic nature. Electroencephalographic confirmation of the diagnosis of epilepsy was obtained in 90 per cent of the patients in whom clinical diagnosis of epilepsy was made. Probability of epilepsy is suggested every time when a definitely pathologic tracing has been obtained which is not specific for epilepsy in a child presenting nervous attacks the epileptic nature of which has not been established clinically. Such pathologic tracings are represented in general by a slow dysrhythmia incompatible with the age, or by continuous or paroxysmal slow hypersynchronous waves which may be elicited by hyperpnea in a child with considerable glycemia. The possibility of an epileptic process should be considered when one observes a pathologic nonspecific tracing in a child presenting nervous attacks whose epileptic nature appears unlikely from the clinical point of view.

Necrotic and Suppurative Forms of Pulmonary Cancer.—According to Poinso and his co-workers, the destruction of the pulmonary tissue and the resulting suppuration which occur in the course of primary cancer of the lung may be explained by the obstruction of the bronchial arteries due to the accumulation of cancerous cells. These necroses occur particularly in cases in which the tumor is located in the hilus. The necrosis may result in formation of a cancerous cavity, or it may be limited to the periphery of the cancer, for which the term extraneoplastic necrosis is suggested. The latter type is responsible for the large suppurative ulcerations which may involve one or several lobes. Infection may be limited or completely absent, and that confirms the necrotic origin by obliteration of the bronchial arteries. When infection is present, it is limited to the peripheral crown of the destroyed zone, and therefore may be considered as secondary. In case of primary infection a massive polynuclear reaction should have been observed in the center of the destroyed area, but was not in the cases studied by the authors.

Sodium Pregnandiol Glycuronidate Test for Pregnancy.—Rivoire and Bueil describe a new rapid and simple technic for the determination in the laboratory of sodium pregnandiol glucuronidate, half the amount of the urine excreted within twenty-four hours (about 500 Gm.) and iso-amylic alcohol for the extraction being used. The final determination is made by nephelometry. The determination of sodium pregnandiol glucuronidate is an excellent test for pregnancy. It has the advantage of not requiring animal experiments. It is as valuable as Friedman's test, the performance of which may require forty-eight hours as compared with three quarters of an hour for the pregnandiol test. In gynecology the usefulness of the determination of sodium pregnandiol glycuronidate is of the first order, but its utilization is limited by material difficulties because repeated analyses are indispensable for the complete exploration of the menstrual excretion of pregnandiol.

Wiener klinische Wochenschrift, Vienna

60:393-412 (June 25) 1948. Partial Index

Colorimetric Determination of Aromatic Amidine in Urine. F. Lieben. —p. 393.

Histidine and Histamine Metabolism in Normal and Toxemic Pregnancy. Regine Kapeller-Adler.—p. 395.

*One Case of So-Called "Voluntary" Acceleration of Pulse with Reverse Accentuation of Cardiac Sounds. F. Scheminzky.—p. 398.

"Voluntary" Acceleration of Pulse.—Scheminzky reports a man between 40 and 50 years old presenting himself at the Vienna Physiologic Institute for demonstration, who was able to bring some of his skeletal muscles into action and who could influence at will his heart beat. By word of command such as "quicker" or "slower" he gradually produced changes in the pulse rate. During tachycardia the pulse rate was increased to double that during rest, reaching a maximum of 123 per minute. Slowing of the pulse rate was manifested as diminished tachycardia, and the minimum reached varied from 57 to 51 per minute and was not much below the starting point at the beginning of the experiment. During bradycardia, on complying with the command "slower," Valsalva's experiment was always associated with a reversion in the accentuation of the cardiac sounds: it was always the first cardiac sound which was louder, while the second cardiac sound was louder and therefore more accentuated during rest and during tachycardia. The reversed accentuation of the cardiac sounds, a sequel of the impaired filling of the heart during bradycardia, is of interest with regard to the pathogenesis of the first cardiac sound in mitral stenosis.

Book Notices

Medical Hypnosis. Volume I: The Principles of Hypnotherapy. Volume II: The Practice of Hypnotherapy. By Lewis R. Wolberg, M.D., Assistant Clinical Professor of Psychiatry, New York Medical College, New York. Fabrikoid. Price, $5.50; $6.50. Pp. 449; 513. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

This book represents probably the most thorough, comprehensive, up-to-date exposition on the history, technic, applications and therapeutic goals of hypnosis published up to the present time. In the preface to volume I, the author states: "Few therapies in the history of medicine have enjoyed simultaneously such widespread acclaim and such universal condemnation as has hypnosis. To some extent these opposing attitudes still prevail. However, recent years have witnessed advances in experimental and therapeutic hypnosis which have tended to establish hypnotherapy firmly as a scientific treatment method.

". . . The teaching of any psychotherapeutic method is best achieved by personal observation and practical experience. For this reason, the manner of presentation in these volumes is somewhat unique. A considerable portion of Volume One is devoted to a step-by-step description of the induction process, illustrating various induction methods by excerpts from transcriptions of actual hypnotic sessions. There is a didactic discussion of the principles of psychotherapy, and of the psychopathologic factors in the different disease syndromes.

"Volume Two contains three complete transcribed case histories which enable the reader to follow the various stages in treatment, and to observe the therapeutic management of the patient as if he were personally present at the sessions from the beginning to the end of therapy. In each instance, these illustrate a preceding discussion of the uses and limitations of the chief short-term psychotherapeutic methods.

"Hypnosis adds speed and directness to psychotherapy, but it must not be regarded as a cure-all. A number of emotional problems fail to respond to hypnotherapy and require traditional long-term analytic approaches.

". . . While books such as this work are helpful, and constitute a convenient guide, they merely indicate the lines along which the physician may develop his therapeutic skills. Practical experience, particularly in some psychiatric training center, is indispensable in permitting of a full development and utilization of available therapeutic aptitudes."

In the preface to volume II, the author states: ". . . The present volume describes the joint technics of hypnosis and psychotherapy by presentation of actual case material through complete transcription of a number of treatment sessions. In addition to several briefer examples, three complete psychosomatic cases are included, illustrative of the three main divisions of therapy presented in this volume.

"The conclusions which have been presented in each of the three types of therapy — symptom removal, psychobiologic therapy and psychoanalytic therapy — are based on clinical experience with a fairly wide variety of cases. As more experience is gained in the different treatment methods, however, a modification and revision of these conclusions will undoubtedly be required."

These quotations accurately indicate the contents of this well written, well organized book. There is an excellent bibliography placed at the end of each chapter and a good adequate index. This book is recommended reading for every psychotherapist whether or not he employs hypnosis in his professional work.

Practice of Allergy. By Warren T. Vaughan, M.D. Second edition revised by J. Harvey Black, M.D. Fabrikoid. Price, $15. Pp. 1132, with 333 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

This book by the late W. T. Vaughan is generally considered one of the best textbooks and standard reference books on the subject. In the preface of the second edition, J. Harvey Black expresses the difficulty of carrying on the tradition established by its original author. The reader senses that Vaughan's vast experience and indefatigable search for knowledge on the subject are lacking. This becomes apparent from a cursory glance at the otherwise extensive bibliography, which contains relatively few recent references in spite of the abundance of new material on the subject.

This edition follows the outline of the previous one, the highlights being the chapters on food, fungi and pollen, which are most comprehensive and remarkably well illustrated. The part on pollen especially, written by O. C. Durham, the recognized authority on the subject, is excellent. Such important contributions to allergy as antibiotic therapy or the new theories concerning the allergic background of the collagen diseases are only casually mentioned or omitted entirely. On the psychosomatic aspect of allergic diseases, further elaboration would be desirable. Little is said about complications of asthma and nothing on the subject of the rehabilitation of the asthmatic patient. While there is an adequate chapter by J. B. Howell on local treatment of fungous diseases of the skin, no mention is made of local measures for atopic eczema. In treating hay fever, the most effective means of properly gaging the doses is not stressed; namely, the observation of the degree of local edema from each injection. In coseasonal treatment, few allergists follow the practice of administering 0.3 cc. of epinephrine with the pollen extract. The important subject of urticaria and angioneurotic edema is confined to four pages. More detailed elaboration on the therapeutic management of the individual allergic diseases would have been more useful than a chapter on pharmacology of allergy.

In spite of these minor criticisms, this book remains one of the most valuable textbooks on the subject. The material is most authoritative and instructive. The book is well printed and well indexed. It is indispensable to any one interested in allergic diseases.

Modern Trends in Dermatology. Edited by R. M. B. MacKenna, M.A., M.D., F.R.C.P., Physician in Charge, Dermatological Department, St. Bartholomew's Hospital, London. Cloth. Price, $8.50. Pp. 432, with 32 illustrations. Paul B. Hoeber, Inc., 49 E. 33rd St., New York 16, 1948.

This excellent volume is a collection of eighteen articles on recent advances and knowledge relating to dermatology. The majority of chapters have been written by outstanding specialists in collateral branches of medicine. The wisdom of this choice is evidenced by the ability of these authorities to assess scientifically the value of new discoveries in their special subjects. Although primarily written for the dermatologist, this book also serves to clarify some of the interrelationships between dermatology and internal medicine.

The volume is introduced by a brilliant chapter on the mechanism of research, emphasizing the need for fundamental thinking and creative work in functional fields. How wide is the abyss between the gifted observer of the commonplace and the sterile case reporter of one more unimaginatively studied and unimportant rarity! The chapter on nutrition is written with disarming candor. In it, Marrack states that while the treatment of some diseases of the skin with vitamins may be beneficial in a higher series of cases than can be ascribed to chance, the effect of such treatment is uncertain. He urges a more careful analysis of strictly clinical reports of improvement following vitamin therapy in order to diminish the vast and usually vague therapeusis in this field.

Two thought-provoking sections in this book are new and welcome strangers to the dermatologic literature. The first, in discussing the prevention of cutaneous disease, states that dermatologists must be students of human and social biology inasmuch as the living organism responsible for many diseases of the skin is neither a mite nor a coccus but man, himself. The second unique section embodies programs devised by the British Army to rehabilitate patients suffering from cutaneous disease.

Although the majority of chapters are thorough and adequate, especially those on hormones and the interpretation of statistics, others require modification in order to prevent unnecessary overlapping and the repetition of well known facts. It is always advisable for collaborators to read one another's articles. The chapter on radiation therapy is uncritical and overly optimistic. For example, the author states that roentgen therapy is effective in psoriasis but neglects to add the words "temporarily and cautiously." The section on therapy is only fair. The surveys of physiology and functional pathology review much recent investigative material but are repetitive and could well be combined with the chapter on anatomy. Many of the aforementioned research projects clearly show that human skin differs so profoundly from that of other animals in structure, function and therapeutic response that one can learn about it only from studies on human beings.

In general, the book is a timely and comprehensive study of dermatologic knowledge. It should be of lasting value to dermatologists and senior students of dermatology.

Thérapeutique par la pénicilline. [Le premier Congrès française de la pénicilline,' 1946.] Ministère de la santé publique. Service central de la pharmacie. Paper. Pp. 894, with illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6ᵉ, 1947.

In the United States 21,491 billion units of penicillin were produced during the first three months of 1948. In the same period in 1947, the output was 7,780 billion. This great increase in output reflects two things: first, more and more penicillin is being used by physicians for the treatment of infections and, secondly, it continues to be the most potent chemotherapeutic agent for the treatment of a wide variety of infections.

In April 1946 a congress was held in Paris to discuss the results of the application of penicillin in France. This four day meeting was sponsored by the Minister of Public Health, Dr. Cavaillon, and the various papers presented are now available in this 894 page book. The first part consists of four chapters on general reports of interest to internists, surgeons and their respective specialties. The second part gives the detailed studies of many physicians throughout France in a variety of infections. The third part is a statistical summary of the results. The papers present clearly what can be accomplished with penicillin in relatively low doses. There are a great many well documented case reports. For all physicians interested in the application of penicillin, this monograph can be recommended for purposes of reference and reading.

The 1946 Year Book of Neurology, Psychiatry and Neurosurgery. Neurology. Edited by Hans H. Reese, M.D., Professor of Neurology and Psychiatry, University of Wisconsin Medical School, Madison, and Mabel G. Masten, M.D., Associate Professor of Neuropsychiatry, University of Wisconsin Medical School. Psychiatry. Edited by Nolan D. C. Lewis, M.D., Director, New York State Psychiatric Institute and Hospital, New York. Neurosurgery. Edited by Percival Bailey, M.D., Professor of Neurological Surgery, University of Illinois, Chicago. Fabrikoid. Price, $3.75. Pp. 732, with 103 illustrations. The Year Book Publishers, 304 S. Dearborn St., Chicago 4, 1947.

The 1946 Year Book of Neurology, Psychiatry and Neurosurgery represents a gallant effort to keep abreast of the rapidly mounting volume in these three disciplines. The abstracts have been carefully selected, but the limitations of space precluded the inclusion of a number of important contributions. Of the 709 pages, 292 are devoted to neurology, 247 to psychiatry and the remainder to neurosurgery. Perhaps the allotment of space in the three categories is somewhat disproportionate. At least as much space might have been given to psychiatry as to neurology. The distribution of subjects in the field of psychiatry is rather good—general topics, child psychiatry, schizophrenic reactions and other psychoses, organic reactions, toxic psychoses, psychoneuroses and psychosomatic disorders, military psychiatry and special therapy. Probably the psychoanalysts will feel that psychoanalytic literature has been treated in stepchildish fashion. The references to psychoanalytic literature are few. The Quiz Section, which is an added feature, lends itself more naturally and readily to neurologic and neurosurgical subjects than to psychiatry. In the first two categories, information is often concrete enough to admit of more or less definite questions and answers. While the body of psychiatric information is considerable, it does not lend itself well to streamlined questionnaires, and treatment on this level is not favorable to a rapidly developing discipline.

It would seem desirable to publish two Year Books, one for neurology and neurosurgery, and the other for psychiatry. Among other things, this plan would give psychiatry more much needed space. Furthermore, it would permit more consideration of the psychiatric implications of internal medicine, pediatrics and the other subdivisions of medicine and surgery with which psychiatry now has such an intimate and productive liaison, at least as fruitful as the contacts with neurology and neurosurgery. Despite faults, largely due to trying to encompass the review of three important subjects in too few pages, the Year Book is a meritorious achievement.

Teaching Psychotherapeutic Medicine. Edited by Helen Leland Witmer, Ph.D. An Experimental Course for General Physicians Given by Walter Bauer, M.D., and others. Introductory Chapter by Geddes Smith. Cloth. Price, $3.75. Pp. 464, with 5 illustrations. The Commonwealth Fund, 41 E. 57th St., New York 22; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, 1947.

This book is a compilation of the recorded verbatim discussions between a group of general practitioners, seven psychiatrists and two internists during a two week course of study. There is, first, a lecture, then actual case presentation followed by an exchange of information based on the personal experience of the authors. These discussions make the book especially valuable to any physician, specialist or general practitioner who encounters these same problems in his daily practice. This is one of the few books on psychosomatic medicine which actually are concerned with the heart of the problem; namely, how to handle a patient with psychogenic complaints. Most of the current publications are so bogged down with confusing terminology, broad generalizations and lengthy verbiage that the average intelligent physician can find little information in them to help him in the actual treatment of the patient. This book will make the physician more secure in the handling of patients with psychogenic complaints.

Exercise During Convalescence: A Manual of Adapted Exercises. By George T. Stafford, Ed.D., Professor of Physical Education, University of Illinois, Urbana, Ill. Cloth. Price, $4. Pp. 281, with 36 illustrations. Drawings by William S. Pusey. A. S. Barnes & Co., Inc., 67 W. 44th St., New York 18, 1947.

This book is written particularly for those engaged in rehabilitation work in the armed services. Physiatrists and physical and corrective therapists will find many helpful suggestions in planning their convalescent programs. The author is well qualified by his many years of experience in physical education. The book contains thirteen chapters. Dr. Stafford states that all programs, such as he outlines, must be carefully supervised by a physician and by one well trained in physical medicine. Physical educators with an excellent knowledge of kinesiology are qualified to give a general exercise program. Caution, however, must be used with regard to general and especially specific exercise programs in civilian hospitals, which do not have many strong, young men patients who can take a convalescent program as outlined in the book. Many are either too young or too old, and many have conditions which require an accurate program of muscle reeducation. The average physical educator usually has had no specific training in muscle reeducation. Corrective gymnastics are often thought to include this, but they actually do not, since corrective gymnastic exercises are meant to cover large muscle groups usually and not to require specific attention to true muscle reeducation or to the orientation of specific muscles. Therefore it is inadvisable to have physical educators treat the sick and handicapped except to give exercises for the uninvolved parts or conditioning exercises to nearly normal patients. With these cautions in mind, this book offers real help toward hastening the patient's recovery by exercise during convalescence.

Operative Oral Surgery. By Leo Winter, D.D.S., M.D., F.A.C.D., Professor of Oral Surgery, New York University, New York. Third edition. Cloth. Price, $12.50. Pp. 1167, with 1240 illustrations. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1947.

This is a good textbook for students. The diagrams and drawings on the chapter of local anesthesia are most explicit and instructive. Under general anesthesia, the various drugs, technics, difficulties in their use and, above all, the value of preanesthetic medication are well described. The section on chemotherapy brings the student up to date. The chapter on exodontia is profusely and well illustrated, but the author has a tendency to refer wrongly to all unerupted teeth as impacted teeth. Surgical technic of the removal of teeth is described and illustrated in detail.

A large section of this book is devoted to tumors. The author includes and describes the operation known as apicectomy under "cysts of the jaws." This procedure is done only under certain conditions such as when there are nonvital teeth with periapical infection. Photographs, diagrams, and roentgenograms are numerous and enhance the excellent description in the text. In the discussion of adamantinomas, it would probably be better from a teaching standpoint to discuss the etiology before the symptomology. There are two schools of thought on the operation referred to as alveolectomy; namely, that it should be immediate and that it should be delayed. The latter is not discussed at all. The author suggests consultation with the rhinologist in fractures of the maxilla where there is nasal and antral involvement. The trend is to refer such cases to men capable of handling extensive fractures of the face rather than to divide responsibility unnecesarily.

The first Gilmer method of intermaxillary wiring for mandibular fractures is no longer used, except possibly as a temporary emergency measure, to be substituted later. In mandibular fractures, the author has a tendency to advise general anesthesia for reduction. Most men in this work use local anesthesia or sedatives alone. The use of general anesthesia is the exception rather than the rule. For clarity and continuity, the immediate treatment of the injured patient should be discussed before the mechanical treatment of the fractured jaws rather than after.

The chapter on diseases and disturbances of the temporal mandibular joint is a most welcome addition to the literature.

Laboratory Technique in Biology and Medicine. By E. V. Cowdry, Professor of Anatomy, Washington University, St. Louis. Second edition. Fabrikoid. Price, $4. Pp. 269. Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1948.

The title of this book, which has been changed from "Microscopic Technique" in the first edition, is misleading, for the book still deals almost entirely with microscopic technics and expositions of microscopic findings. After brief chapters on choice of methods of biologic study and on standardization of stains, the book is essentially an encyclopedic dictionary of biologic terms and technics. The subjects are arranged in alphabetical order and the expositions vary in length from 1 line to 11 columns. Many of the long articles are by guest authors,. as for example "Oxidation-Reduction Potential," by C. Carruthers, and "Quartz Rod Technique," by M. H. Knisely. The chief value of the book is as an introductory reference to laboratory phases of biology. It will be of most value to the young research worker in any field of histology. To the experienced histologist, descriptions of the technics, though brief, have enough detailed information to serve as a good laboratory reference book.

Clinical Endocrinology and Constitutional Medicine. By A. P. Cawadias, O.B.E., M.D., F.R.C.P., Endocrinologist to the Order of St. John Clinic, London. Fabrikoid. Price, 42s. Pp. 368, with illustrations. Frederick Muller, Ltd., 29 Great James St., London, W. C. 1, 1947.

In the preface the author regrets that the late Sir Thomas Lewis "unfortunately over-emphasized the physiopathological chapter of diseases and under-rated the great importance of clinical observation." He then presents over 300 pages of unscientific nonsense and modestly (sic) concludes "I have developed the modern constitutional point of view on medicine" (page 359). In the treatment of goiter he says, "I prefer the homeopathic dilution (6 times) as the dangers of aggravation through iodine, and of production of a toxic goitre, are very real" (page 82). American physicians will be surprised to find that in the treatment of Graves' disease "protein restriction is indicated because proteins raise metabolism and tire the liver" (page 99). The author has seen good results from "galvanisation or galvano-faradisation of the thyroid." In the treatment of myxedema he advises, as an adjuvant to thyroid, the use of sulfur. On page 100 he states, "It is a powerful oxidiser, and can be used either in colloidal form, as an absorbable organic preparation, or in homeopathic form."

In regard to the treatment of diabetes he writes, "Spa treatment is of the greatest importance and except in very severe cases should always be prescribed. Choice of spa is based on the special features of various mineral waters. According to individual features, Vichy, Vittel, La Bourboule, Harragate or Bath is selected. High altitude health resorts, particularly those of the Engadine, often prove far more beneficial than spas."

The author makes the statement that, in the treatment of diabetic acidosis, "An enema or aperient is necessary for elimination of poisons". (page 314).

Headings which are intriguing are used, such as The Postpuberal Hypotestosteronic Eunuchoid, Cerebropituitary Hyperoestrinic Metrorrhagia, Hypotestosteronic Morpho-Psychological Androgynoidism, Cerebro-Pancreatic Hyperinsulinic Hypoglycaemia.

This is just about the worst book on endocrinology the reviewer has ever seen. It is incredible that, when the school children in England are deprived of textbooks because of a shortage of paper, so much should have been wasted in this book. Few American physicians will wish to aid in the depletion of England's supply of paper by purchasing this book. Most will continue to be grateful to Sir Thomas Lewis for his contributions to science and medicine.

Pharmacology and Therapeutics in Nursing. By Marion Sylvester Dooley, A.B., M.D., and Josephine Rappaport, R.N., B.S., Assistant Chief, Nursing Education, Veterans Administration Hospital, Alexandria, Louisiana. Cloth. Price, $3.75. Pp. 444, with 26 illustrations. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 18, 1948.

This new textbook has an entirely new approach to the problem and should be useful for the nurse. The nursing care is emphasized. It is increasingly important for the nurse to be familiar with the drugs, particularly the new ones. As the authors state, "by concentrating the discussion on standard drugs and using the metric system throughout, it saves priceless hours."

There are only a few criticisms. On page 91 under the anticonvulsants no mention is made of trimethadione ("tridione"). On page 159 "mecholyl chloride" and "mecholyl bromide," which has a much wider use, are not mentioned at all. On page 162 appears the statement, "taking it to 'reduce' is also a dangerous delusion." This, of course, is not true. There have been many reports of the usefulness of amphetamine sulfate ("benzedrine sulfate") in the diet program for weight reduction. On page 318 the use of gentian violet is mentioned for the treatment of pinworms. However, it is important to mention that treatment with gentian violet must be continued for three alternate weeks in order to be effective. The greatest number of failures is due to the fact that gentian violet is not given in a large enough dose or for a long enough period of time.

Physical Education: Interpretations and Objectives. By Jay B. Nash, Ph.D., Chairman of the Department of Physical Education and Health, School of Education, New York University, New York. Cloth. Price, $3. Pp. 288, with illustrations. A. S. Barnes & Co., Inc., 67 W. 44th St., New York 18, 1948.

In this little volume the author attempts "to investigate the place of education in a democracy; to indicate the specific contributions of physical education to general educational objectives; to indicate the relationships between physical education as a teaching subject and democratic outcomes in terms of health, recreation and citizenship."

Part I does a good job of defining physical education and showing its important place in the educative process. It is marred by a minor inaccuracy on page 42, where the author states that the one crop pattern of farming through diminishing the mineral resources of the soil is "a predisposing factor of rickets for millions of people."

Part III is introduced by a baffling figure showing the four level development in education in man. Over the figure is the cryptic title "Organismic Whole Gestalt of Emergents." On the next page the author falls into the error of defining immunity only in the limited terms of phagocyte proliferation. But in spite of this inauspicious beginning, part III is perhaps the most valuable part of the book because of its elucidation of organic, neuromuscular, interpretive (cortical) and emotional development.

In part IV, the author discusses recreation, health and character as objectives of physical education; it is a pleasure to note his broadmindedness in such statements as the following: "Physical education has had no monopoly on the setting up of or the contributions to recreational standards. This has been the responsibility of all education and of the total community. A special tribute should be paid to science, vocational education, music and the languages." "Physical education has no monopoly on contributions to the health of the human organism. As a matter of fact, in comparison with all the other educational and community factors, its contributions are relatively small. The very name, Department of Health and Physical Education, carries some unfortunate connotations. One of them is that health and physical education are synonymous or, even worse.

that physical education departments should take over the responsibility for the health of the school-age child. Both of these ideas are very unfortunate."

Though this volume is written primarily for use as a text for students majoring in physical education, it should hold interest for school administrators, school physicians, health educators, recreation leaders and parents.

Myotonia: Thomsen's Disease (Myotonia Congenita), Paramyotonia, and Dystrophia Myotonica: A Clinical and Heredobiologic Investigation. By Eivind Thomasen. Translated from Danish by Finn Brink Carlsen. Denne Afhandling er af det lægevidenskabelige Fakultet antaget til offentlig.at forsvares for den medicinske Doktorgrad, København. Paper. Pp. 251, with illustrations. Universitetsforlaget i Aarhus, Aarhus, Denmark, 1948.

This excellent review and report of new cases of myotonia comes from the hospitals and scientific departments associated with the University of Copenhagen and from the Institute for Human Genetics in Denmark. The translation from Danish into English, although a little stilted, is so good that the author's meaning is seldom unclear. The various forms of myotonia are fully delineated, the text being supplemented by pertinent illustrations, an adequate bibliography and case reports of twenty families. The book only lacks an index to make it a completely useful monograph on two syndromes of muscular disability. To Thomsen's original concept of myotonia congenita, first described from his own symptoms in 1876, has been added a subvariety, paramyotonia. Dystrophia myotonica, which the author feels is a different disease, also has myotonia as one of its symptoms. Myotonia acquisita, a nonhereditary type of myotonia, does not, in Thomasen's opinion, have sufficient basis for differentiation as a special group. Myotonia congenita, on the other hand, shows dominant heredity, with varying manifestations. The author gives a brief biography of Dr. Thomsen and traces additional cases in his family from persons now living in Denmark. Myotonia disappears with heavy doses of quinine, a drug of some use in the treatment of Thomsen's disease, but less valuable in cases of dystrophia myotonica. Thomasen found that most patients with myotonia were made worse by cold, fatigue, menstruation and pregnancy. Fright may bring on an acute attack. The disease tends to become less burdensome in old age. These conclusions, and others of equal value, carefully compiled by the author, give the book an outstanding position in the literature of muscular diseases.

Intracranial Tumors. By Percival Bailey, Professor of Neurology and Neurological Surgery, University of Illinois, Chicago. Second edition. Cloth. Price, $10.50. Pp. 478, with 171 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois, 1948.

This admirable book has evidently been very popular, for a second edition has had to be brought out. In the preface to this edition, the author states that "errors have been corrected and recent advances in our knowledge inserted," but this reviewer, with the first edition alongside of the second, has found few changes.

The two important advances in neurologic surgical diagnosis that have been made since the first edition appeared are angiography and electroencephalography. On the first of these, the author comments briefly (page 395); he expresses the hope of being able by this method to detect glioblastomas and other types of tumors before operation. About electroencephalography, however, he does not comment at all; at least, this reviewer has been unable to find a reference either in the text or in the index, though there is one reference to the subject (no. 226) in the bibliography. Yet it would have been of real interest to have had the author's opinion about this method of examination and his estimate of its value.

There are a few inconsistencies that are rather striking. In his preface, the author says that localization of tumors has been solved by the introduction of ventriculography; yet on page 395 he states that he makes use of it in only 15 per cent of his cases. This is not in accord with usage now customary in most neurosurgical clinics. The difficulty the author describes in diagnosing tumors of the third ventricle might be somewhat obviated if air were injected in one side only, and then roentgenograms taken before air is injected on the second side.

Because of the author's objection to glazed paper, it was not possible, in either edition, to reproduce roentgenograms. Therefore drawings of roentgenograms were made which, to many readers, are unsatisfactory. For the same reason, drawings of patients were used instead of much more satisfactory photographs. Hence, in the new edition, both reviewer and reader will undoubtedly welcome the inclusion of an atlas of sixteen roentgenograms which are well reproduced. If only there had been more!

The criticisms expressed in this brief review in no way detract from the great value and importance of this work. The author is one of the leading authorities on the pathology of brain tumors, and the subject is approached primarily from that angle. His views throughout are sound and based on vast experience. This book should be in the library of every neurologic surgeon. Furthermore, it is so clear and so readable that all medical students would do well to study it.

The Engaged Couple Has a Right to Know: A Modern Guide to Happy Marriage. By Abner I. Weisman, M.D., Assistant Visiting Gynecologist and Obstetrician, Metropolitan Hospital, New York. Foreword by Dr. Abraham Stone. Cloth. Price, $3. Pp. 256, with 14 illustrations. Renbayle House, 1165 Broadway, New York 1, 1948.

The past few years have brought out many much needed books for engaged couples and those needing help in marriage adjustment. This book deserves to be high on the list of recommended books in this field. It is most inclusive without being too lengthy. It touches on marriage historically, as well as giving it place in present day society. It discusses readiness for marriage and how to select a mate. It takes up health and physiology and the role of sexuality in a frank and capable manner. It also goes into the matter of blood incompatibility and sterility, a field in which the author is already an authority. It discusses the honeymoon and sexual adjustment and even includes the advent of the first baby, as well as the various facets of planned parenthood. There is a forward by Dr. Abraham Stone and a fairly lengthy list of suggested reading for young persons contemplating marriage. The author is a gynecologist who has already written for the medical profession and the laiety. It is a welcome phenomenon to see a book so sensitive to the emotional and social problems within medical practice come from one within a speciality other than psychiatry.

Die Bildung des Arztes: .Ein Beitrag zur Bildung des Menschen überhaupt. Von Curt Oehme. Paper. Pp. 39. F. H. Kerle Verlag, Theaterstrasse 18, Heidelberg, 17a, 1948.

This is an interesting monograph comprising a series of lectures presented at the University of Heidelberg on the problems of general and professional education facing Germany today.

The roots of the present depression in medical education can be traced as far back as the first World War, as shown by the comparatively few contributions to medical knowledge published in German periodicals since that time.

Social economic conditions, the Nazi-autocratic restriction of scientific interchange with other countries, have interfered with medical progress as compared with England and America. Racial prejudice and war psychoses have been a further factor, and the story of the Nuremberg trials distinctly reflected the low plane to which the greatness of German medicine had fallen.

The present chaotic state of German medical education is ascribed to four causes: (1) the lowering of premedical educational standards, the mass admission of large numbers of students poorly prepared for the study of medicine and inadequate teaching facilities in the several university medical schools; (2) an attitude of arrogant self satisfaction with the existing educational system; (3) loss to medical faculties of the great leaders of a former day; replacements can only be made from younger physicians inadequately prepared for medical teaching; (4) teaching at the bedside and careful laboratory training are practically nonexistent, while the spirit of research is hardly evident anywhere.

The author maintains that a revival of medical education in Germany implies a complete revision of the entire educational system, and above all a reawakening of the spirit and soul of medicine. A generation will pass before the results of the teaching of a sound philosophy of living will be evident. The author makes the plea for a more humanistic approach to the study of medicine, coupled with a more complete preparation for the study of the basic and clinical medical sciences with a keen appreciation of their spiritual and cultural values in the art and practice of medicine.

Such, according to the author, is the challenge that confronts medical education in Germany today.

Public Health Administration in the United States. By Wilson G. Smillie, A.B., M.D., Dr.P.H., Professor of Public Health and Preventive Medicine, Cornell University Medical College, New York. Third edition. Cloth. Price, $6.50 Pp. 637, with 43 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1947.

This splendid textbook, first printed in 1935, is now in the third edition and has been thoroughly revised. It is well indexed, nicely arranged, rather well illustrated, particularly with graphs, and in general gives an attractive appearance. Part I has to do with organizations in the United States. Part II has for its subject "The Administrative Control of Cmmunicable Diseases"; part III, "Basic Activities of a Health Organization," and part IV, "Organization of Public Health Programs."

The book is subdivided in such a way that it will be easily used as a textbook and has evidently been arranged with that in mind. Particularly suitable would be the use of this book by junior or senior medical students. It is well documented at the end of the chapters.

Dr. Smillie has done a notable work in preparing this book and keeping it up to date. It can be recommended without reservation.

A Handbook for Dissectors. By J. C. Boileau Grant, Professor and Director of the Department of Anatomy, University of Toronto, Toronto, and H. A. Cates, Professor of Anatomy, University of Toronto. Third edition. Cloth. Price, $3. Pp. 415, with 19 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

This excellent little book is of especial value to medical students at this time. The third edition is the product not only of many years sound teaching, but also of eight years' experience with the earlier editions. The first edition referred to the authors' textbook only; this one does not refer to any single textbook but can be used with equal convenience with any or all of them. Its outlook is clinical—preparation for medicine and surgery. Sound knowledge of gross human anatomy is obviously a basic essential of such preparation. Dissection is rightfully required by all the state laws. But biochemistry, bacteriology, pharmacology, etc., are also fundamental and must have places in the preclinical medical curriculum. The time available for dissection is reduced, and therefore cannot be wasted but must be spent to the greatest advantage. On this consideration the Canadian book is admirable. On completing one careful dissection with its guidance, medical students can go on with the medical curriculum. But most medical students are also students of general biology and specialists in some field. They cannot be content with the minimum study of gross human anatomy. They will return to it many times, often with further dissection.

Your Skin and Its Care. By Howard T. Behrman, M.D., and Oscar L. Levin, M.D. Cloth. Price, $2.50. Pp. 255, with illustrations. Emerson Books, Inc., 251 W. 19th St., New York 11, 1948.

This book is intended for the lay reader, although it contains information which is presented in such a way that it makes interesting reading for others who wish orientation concerning knowledge of the skin. Fourteen chapters provide discussions on the structure of the skin and its function, the relation of health to the skin, care of the face, quackery, diseases of the skin, care of the hair and other problems of similar nature. The book is not too technical for those who have a genuine interest in their skin problems, although of course it is not intended as a textbook for medical students or others who have need for specialized training. It is the type of book to which the physician can refer his patients who want more information than can be obtained during the average consultation session.

Diseases of the Eye. By Sir John Herbert Parsons, C.B.E., D.Sc., F.R.C.S., Consulting Ophthalmic Surgeon, University College Hospital, London, and Sir Stewart Duke-Elder, K.C.V.O., M.A., D.Sc., Surgeon Oculist to the King. Eleventh edition. Fabrikoid. Price, $7. Pp. 732, with 389 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1948.

The eleventh edition of this popular short textbook has been revised to include therapy with penicillin and sulfonamide drugs and short descriptions of toxoplasmosis and brucellosis. There are included chapters on causes and prevention of blindness, hygiene of vision, outline for complete examination of the eyes and therapeutic notes giving strength and dosage of drugs used in ophthalmology. The final 14 pages give the visual requirements of Great Britain for the army, navy, air forces, civil aviation, merchant marine, railroad workers, civil employees, police force and drivers' license.

The book is an adequate short textbook in ophthalmology for students and general practitioners.

Sport und Kreislauf. Sammlung der Referate gehalten am IV. Sportärztlichen Zentralkurs 1946 in Lausanne. Herausgegeben durch den Schweizerischen Landesverband für Leibesübungen und die Verbindung der Schweizer Ärtze. Mit Unterstützung der Firma Dr. A. Wander A. G., Bern. Paper. Price, 12.80 Swiss francs. Pp. 154, with 21 illustrations. Hans Huber, Marktgasse 9, Bern, 16, 1947.

This little volume is a compilation of the reports made on the heart and circulation at the 1946 Sports Physicians' Conference held at Lausanne, Switzerland. Previous to World War II, a good deal was heard about the European sports physicians and the interest abroad in study and research on the physiologic results of sports activity. Evidently in postwar years there is renewed interest among physicians in this subject. Included in the symposium are papers on functions of the heart and circulation in reference to participation in sports, cardiologic considerations in sports medicine, electrocardiographic changes in connection with continued physical effort, ergometric and spirometric measurement of reaction to exercise, suggestions on the examination of school children and a supplement on research in sports medicine.

The Treatment of Impotence with Special Reference to Mechanotherapy. By Joseph Loewenstein, M. D. Foreword by Eric B. Strauss, D.M., F.R.C.P., Physician for Psychological Medicine, St. Bartholomew's Hospital, London. Cloth. Price, 6s. Pp. 49, with 4 illustrations. Hamish Hamilton, Ltd., 90 Great Russell St., London, W.C.1, 1947.

This short monograph deals primarily with mechanotherapy in the treatment of impotence. The author gives a history of the various apparatuses that have been used in the treatment of impotence, and then describes in detail a gadget called the "coitus training apparatus." Then follows a discussion of indications and technic of its use. Eleven case reports of impotence treated by this method combined with psychotherapy are given. It is difficult to evaluate this method of treatment. Apparently, from the evidence presented, the gadget described by the author has a place in the treatment of some forms of impotence. This monograph will be of greatest interest to those who specialize in sex disorders.

An Index of Modern Remedies. By William Mair, F.R.S.E., F.C.S., M.P.S. For the Medical and Pharmaceutical Professions Only. Fourth series. Paper. Price, 3s. Pp. 68. The Scottish Chemist, 240 Albert Drive, Pollokshields, Glasgow, S.1, 1948.

This brief index of remedies is concerned primarily with the agents that are available in the British Isles, and for this reason the booklet will provide a source of information to those that are interested in the nomenclature and composition of British remedies. It is not, of course, a therapeutic guide. The booklet will be of interest primarily to the teacher, librarian and those who occasionally have reason to interpret prescriptions from Great Britain.

Tabulae biologicae. Editores: G. Backman, et al. Vol. XXII Pars I.: Oculus. Editores: K. Steindorff, E. P. Fischer, J. S. Friedenwald et Arnold Sorsby. Paper. Pp. 408, with illustrations. Uitgeverij Dr. W. Junk, N. Z. Voorburgwal 64, Amsterdam (C), 1947.

This paper-covered book, which is part I of volume XXII, is concerned with the eye. In part it is a tribute to Kurt Steindorff, who was one of the early students of the eye. Chapter by chapter pertinent information concerning this organ is presented, so that those with various interests—biologist, chemist or surgeon—will find interesting data.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

NITRITOID REACTION

To the Editor:—Nitritoid reactions are not supposed to occur with oxophenarsine hydrochloride. Please give an opinion on the following reaction and suggestions for future management. The patient is a white woman aged 19 years. Except for secondary syphilis when the patient was first seen, physical examination was completely negative. History of exposure or contact is lacking, so that the date of the primary lesion is unknown. The treatment followed was that recommended by the Cooperative Clinical Group for early syphilis. During the initial part of this schedule, she also received 8,500,000 units of penicillin. Until two weeks before I first saw her reactions were absent except for occasional moderately severe nausea beginning an hour or two after the administration of the oxophenarsine. These cleared completely on the following morning. Reactions did not occur during the bismuth phase. Then, within five minutes of an injection of freshly prepared oxophenarsine, her face became slightly flushed, she complained of lightheadedness, appeared anxious and suddenly fainted. The pulse was extremely weak, and respiration was shallow. She responded to epinephrine, but was weak and had nausea with retching for a half hour after she recovered from the faint. Nausea persisted for several hours, until she fell asleep for the night. This reaction occurred on the fourth injection in the second oxophenarsine series. To be certain that it was not partly of psychic origin, I gave her an injection of sterile water the next time and reaction did not occur. She is now receiving bismuth compound again and there have been no more reactions. Is it advisable to continue the oxophenarsine when it is time to start it again and have her take ephedrine the day before and after the injection, or use some epinephrine preceding the injection? Is it better to use a different arsenical, or eliminate use of arsenicals entirely?

M.D., Pennsylvania.

Answer.—The question whether this 19 year old female patient with secondary syphilis requires any therapy with arsenic or bismuth compounds depends on when she received the 8,500,000 units of penicillin and how it was given. If this amount of penicillin was administered early in the patient's treatment, and given every two or three hours day and night in aqueous solution within a period of four to fifteen days, or if, alternatively, it was given by daily intramuscular injections of penicillin in an absorption-delaying medium, such as peanut oil-beeswax or procaine penicillin, over a period of ten days or more, little if anything is to be gained by giving her arsenic and bismuth compounds. The chance of improving on the results of this amount of penicillin alone are relatively small and the risks of treatment greatly increased.

Eight and one half million units of penicillin given for secondary syphilis will provide a 10 to 20 per cent failure rate at the end of eighteen to twenty-four months. Conversely, it will provide an 80 to 90 per cent chance of "cure" without the addition of arsenical therapy. The consensus, as expressed in the report of the Syphilis Study Section to the Council on Pharmacy and Chemistry, "Penicillin in the Treatment of Syphilis" (J. A. M. A. **136**:873 [Mar. 27] 1948), is that penicillin should be used alone as an initial course of treatment for early syphilis. Arsenic and bismuth compounds, if employed at all, should only be used as retreatment combined with penicillin in the event of failure of the first course of treatment.

It is suggested that in this patient treatment now be stopped and that she be followed at monthly intervals with physical and quantitatively titered serologic recheck examinations. If her progress is satisfactory at the end of one year, these recheck examinations may be carried out every three months during the second year and every six months thereafter. The patient's spinal fluid should be tested about six months after the initiation of treatment and again at the end of the second year of observation.

Nitritoid reactions do occur from oxyphenarsine hydrochloride ("mapharsen"), though they are much less frequent than after the arsphenamine series of drugs. If it becomes necessary to use arsenic in this patient again, oxophenarsine should be cautiously employed, beginning with small doses, e. g., 10 mg., and gradually increasing.

ADOPTION

To the Editor:—A couple has made application to a welfare agency to adopt a child. The welfare worker asked them how they would feel about adopting a child under the following conditions. The father and the mother of the child are university graduates. The father is known to have had a positive Wassermann reaction. The mother's Wassermann reaction has always been negative. Examination of cord blood at the time of the birth of the child showed positive reaction. However, repeated Wassermann tests on the child and mother after delivery have elicited negative reactions. No history as to kind or type of treatment either of father or mother was obtainable. This couple wants to know whether there is any chance of the development of congenital syphilis in the child or whether it is likely that any congenital deformity or weakness could show up from this condition in later life. I have been asked to give an opinion on this matter before they consent to adopt the child.

M.D., Arizona.

Answer.—It is difficult to give a specific answer to the inquiry because the age of the child to be adopted is not given. The fact that examination of cord blood at the time of the child's birth gave positive results does not indicate that the child does have or will have congenital syphilis, because that serologic test is of the mother and not of the child. The question whether or not congenital syphilis will develop depends not on whether the antigen went over into its blood stream, but on whether the Treponema pallidum did. If the antigen alone, and not the T. pallidum, went through to the child's blood, the reaction to the child's serologic test usually will become negative within a period of approximately four months. Accordingly if the child to be adopted is more than 6 months old, if it has had repeated serologic tests with negative results since a month or so after birth, and if the child manifests no signs of congenital syphilis, the probabilities are that evidence of the disease will never develop. It would be advisable, however, to have the child examined by a pediatrician interested in syphilis or a syphilologist before approval is given to adoption of the child.

SYPHILIS IN PREGNANCY

To the Editor:—A woman is now pregnant for the fourth time in eleven years. About three years prior to her first pregnancy, a 4 plus Wassermann reaction was obtained in the course of a routine examination. The only history obtainable relative to syphilis was that old medical records revealed that her mother had died of aortic heart disease and had also had a 4 plus Wassermann reaction. Older and younger siblings were examined repeatedly and found to have negative serologic reactions. While this patient did not show stigmas of syphilis, and did not give any history suggestive of primary or secondary lesions, she was given a full course of treatment with oxophenarsen hydrochloride and bismuth compound. She was again treated similarly during each of her previous pregnancies, giving birth to normal children without physical or serologic evidence of syphilis. In spite of the extensive treatment and child bearing, the patient continues to have a 4 plus serologic reaction. Should she be treated again during this pregnancy? If she is to be treated, can penicillin be substituted for arsenicals, which the patient dreads because of the unpleasant minor side reactions which have accompanied these injections? If penicillin is to be used, what dosage do you recommend for ambulatory treatment with penicillin in oil and wax or the newer procaine penicillin preparations? What is the optimum time to treat the patient?

Fred S. Taber, M.D., New Brunswick, N. J.

Answer.—A woman with congenital syphilis runs virtually no risk of passing the disease to her unborn child, even though untreated. Since the evidence of congenital infection of the mother in the present instance is inconclusive, however, it must be assumed that her disease is acquired. The syphilis status of the woman's husband is not mentioned. If he has not been examined it might be worth while to do so, since a positive blood serologic reaction or other evidence of the disease would make the possibility of an acquired infection in this woman more likely.

A woman who has had adequate treatment with arsenical and bismuth compound for syphilis and who has responded normally runs virtually no risk of giving birth to a diseased infant, even though untreated during her pregnancy. Cole and the cooperative clinical group in their article, "Syphilis in Pregnancy" (*Ven. Dis. Inf.* **15**:83 [March] 1934) found that among 52 women considered "cured" there had been no evidence of a syphilitic child's having resulted from pregnancies up to fifteen years after infection. The usual advice, however, was to treat in each subsequent pregnancy because of the difficulty of determining "cure." When the disease is of long standing and normal children have resulted as a result of previous therapy the possibility of infection of the fetus becomes even less. Only occasionally does an infected fetus result when the disease in the mother is more than ten years old.

The one disconcerting point in the present case is that the expectant mother is seropositive. Nothing is said of study of the spinal fluid. If this has not been performed it should be done (cell count, total protein, serologic test for syphilis and colloidal test). A good time to carry this out would be during the hospitalization immediately after delivery. A seropositive mother is more apt to have some remaining activity of her infection than a seronegative one, and the risk of an infected fetus if untreated is appreciably greater.

Since penicillin therapy entails so little likelihood of reaction, is so effective in preventing congenital syphilis and is so easily given over a relatively short period, it would probably be wisest to treat such a patient with this drug even though the risk of infection of the fetus without treatment is small. Treatment with penicillin may be given at any time in the pregnancy, preferably before the sixteenth week, but it is effective even in the last month. Six hundred thousand units of penicillin in oil and wax, and presumably similar dosage of procaine penicillin, given once daily intramuscularly for eight days for a total dose of 4,800,000 units, is sufficient. Some workers prefer larger total dose, for example 6,000,000 units in ten days or even more than this, but evidence is lacking that this is necessary to protect the fetus. Only one course need be used and no adjunct chemotherapy with heavy metal compound is indicated. Results of such therapy are described in "Treatment of the Syphilitic Pregnant Woman with Penicillin in Oil Beeswax: A Comparison with Results Obtained Using Aqueous Sodium Penicillin" by N. R. Ingraham Jr., E. K. Rose, H. Beerman and others (*J. Ven. Dis. Inform.* **28**:155 [Aug.] 1947).

It is customary after such treatment to perform a quantitative titered serologic test for syphilis once monthly until term to determine the serologic response and to watch for evidence of serologic relapse. In a seroresistant case such as has been described, however, serologic response to penicillin therapy, other than the fluctuations which normally occur in repeated studies of seroresistant cases, is not to be expected. Treatment, therefore, must be empiric, based on experience with other patients, and serologic follow-up, while of academic interest, will not form a real guide as to the future handling of the mother. It is well to bear in mind that if the mother is seropositive at delivery the infant may also be seropositive though not syphilitic. The serologic follow-up of such an infant is described in any of the recently published standard texts for syphilis.

ERYTHROBLASTOSIS

To the Editor:—A 36 year old white woman is Rh negative and slightly less than two months pregnant. Her husband is homozygous Rh positive. They have 3 living children, the youngest being 10 months of age and the only one of twins born of the last pregnancy to survive. The other twin died soon after receiving 60 cc. of Rh-positive blood when 2 days old. The living twin withstood the same type of transfusion although she did have an epistaxis. The antibody titration, post partum, was 1/32, and a recent test showed the same concentration of antibodies. Since the father is homozygous positive this present pregnancy is certain to result in an Rh-positive baby and therefore a recurrence of erythroblastosis. Are these circumstances a justifiable reason for a therapeutic abortion? If not, is there any method of preventing the development of further antibodies in the mother to endanger the baby? Would induction of labor, or cesarean section, before term increase the chances of the baby? My present plans are to terminate the pregnancy about two weeks before term by induction of labor or cesarean section, depending on the condition of the cervix at that time, and give the baby an exsanguination transfusion of 350 cc. of Rh-negative blood devoid of antibodies through the umbilical vein. Will you please offer any further suggestions or criticisms?

T. A. Strang, M.D., Long Beach, Calif.

Answer.—The query does not furnish information on several points which could help in formulating a more complete answer: 1. What manifestations of fetal erythroblastosis were present in the deceased twin? In the surviving twin? 2. The reference to the antibodies does not state what type of Rh antibody was present. Recent studies' have shown that blocking antibodies have a more ominous prognostic significance than agglutinins. On the basis of the information contained in the query the following answer is offered.

There is no justifiable reason for a therapeutic abortion. Modern methods of treatment, especially replacement transfusion, offer an excellent outlook for saving the majority of infants with fetal erythroblastosis, except those with universal fetal hydrops.

Methods are not available at present to prevent development of further antibodies in the mother.

Opinions of experts are divided on the question of advisability of terminating pregnancy by inducing labor or by cesarian section. It may be that further experience with replacement transfusions will encourage such procedure.

The plan offered in the query is reasonable, but it may be still better to test for Rh antibodies (agglutinins, conglutinins and blocking antibodies) at frequent intervals during pregnancy. Observation of the curve of the various antibodies may be helpful in anticipating the degree of dosage to the baby, and it may help in selecting the time for the operation.

The replacement transfusion should be given only if there are indications for it: evidence of disease, or Rh-positive blood in the newborn infant. The latter must be expected in view of the fact that the father is homozygous Rh positive. In spite of that expectation the baby's blood should be Rh tested immediately after birth.

It is probably better to give no less than 500 cc. as replacement transfusion and to withdraw a similar amount minus about 10 cc. per pound of the infant's weight.

IMMUNIZATION AND LEUKEMIA

To the Editor:—A recent scare has come about in this region about a possible relation between immunizing doses of diphtheria, pertussis and tetanus toxoids and leukemia, especially in children of school age. It there has been anything in the literature I have missed it. At least one nearby physician, I understand, has stopped administering such toxoids, and the rumor has reach such proportion that I would appreciate an authoritative statement.

M.D., Minnesota.

Answer.—Evidence is not available of any relation between diphtheria, pertussis and tetanus immunizing agents and leukemia. Immunization procedures might be instituted against the diseases mentioned, and some time later the discovery made that the child had a preexisting blood dyscrasia. However, Byers and Moll (*Pediat.* **1**:437 [April] 1948) have reported instances of encephalitis following pertussis vaccine injections. Toomey discussed the latter subject at the recent meeting of the American Medical Association June 23, 1948. Except on rare occasions, such as exposure to smallpox, inoculations for the purpose of active immunization are, as a rule, better postponed if the subject is not in good health.

BLEEDING GUMS

To the Editor:—What is recent opinion on causes and treatment of pyorrhea? A married woman aged 36, otherwise in excellent health, has had slightly bleeding gums for years. She has been informed that there is deep pocket formation and loss of alveolar bone around all her teeth, probably due to pyorrhea. She has taken excellent care of her teeth, and had a well balanced diet, including plenty of milk, fresh fruits and vegetables. Basal metabolism and blood chemistry tests are normal. She does have some malocclusion. Periodontists advise the extraction of the most severely involved teeth (though they differ as to how many have to be removed) and claim that they can treat the remaining teeth and arrest the pyorrhea and thus the alveolar destruction. Other dentists are more skeptical of the outcome of periodontal treatment. The patient is particularly concerned about the cause of the gum disturbance because her daugter, aged 9, who has been carefully watched as to mouth hygiene, diet and vitamin intake, has recently shown evidence of bleeding gums. Is such a tendency inherited? Both mother and child have always been underweight.

M.D., New York.

Answer.—The causes of periodontal lesions may be classified for the most part in three categories; i. e., (1) dysfunctional, (2) irritative and (3) systemic or idiopathic, with the possibility of any combination of them. Under these headings may be grouped many individual factors, the principal half dozen of which, in order of importance, are traumatogenic occlusion, poor hygiene, calculus, dietary deficiency, poor restorative dentistry and systemic causation.

On the accurate diagnosis of the etiologic factor or factors will depend the rationale of successful therapy. Starting with the three categories, all the teeth and their supporting structures must be placed in a state of equilibrium in which no tooth or its peridontium is subjected to stresses beyond its physiologic limits during normal masticatory functions. In this regard, the eradication of traumatogenic occlusion is of prime importance. In dealing with the second category, a program must be carried out to bring about the remission of all agencies contributing to inflammatory processes. The third and final category with systemic disturbances includes those conditions which might adversely alter the body metabolism. Failure to recognize some one active causative process may be sufficient to retard or completely forestall a satisfactory prognosis.

The brief history of the case mentioned does not permit a specific answer. It would suggest that the active causes may be both dysfunctional and inflammatory because of the known malocclusion and gingival hemorrhage. The normal basal metabolic rate and hematologic findings point toward a local origin. As to whether a number of teeth need extraction or not, it could only be decided by direct examination of the patient.

The role played by heredity in such cases might obtain only after all the commoner factors have been ruled out. In the child's case, if the oral hygiene is really good, a tentative suggestion would be to examine her for obstruction of the upper respiratory passages, as mouth breathing is a fairly common cause of inflammation of the anterior gingivae in children. Again, since she is in the transition age between deciduous and permanent dentitions, the bleeding may be associated with eruption of teeth.

CHRONIC PROSTATITIS

To the Editor:—One frequently runs into cases of chronic prostatitis, nonspecific, in men past 50 years. Their prostate gland may show a moderate amount of enlargement on palpation. On massage the secretion is loaded with pus cells and a motile bacillus. In the past the only treatment used with these cases was weekly prostatic massage plus occasional passing of a sound. This seldom seems to clear them up. Is there any recent new treatment for these obstinate cases?

Eugene C. Lowe, M.D., Miami, Fla.

ANSWER.—A varying degree of nonspecific chronic prostatitis is common in men over 50 years of age. In the majority of cases the infection is of minor degree and causes few if any symptoms. It rarely becomes acute. However, when the prostatic secretion is found to be loaded with pus cells, it can cause local symptoms and can act as a focus of infection. Prostatic infection may be secondary to other foci, such as tonsils or teeth, and, in persistent cases, these should be excluded. Before treatment is instituted, urographic and cystoscopic studies should be made to exclude the presence of complications, such as prostatic calculi, calculus or tumor in the bladder. Vigorous prostatic massage, carried on daily or every other day for a period of several weeks, usually will reduce the degree of infection to a great extent. Infection in some of these cases may be controlled by various drugs and by antibiotics. Although sulfonamide drugs do not usually eliminate chronic prostatic infection, cases have been reported in which there has been material benefit. Many urologists have reported cases in which the infection was much reduced or eliminated by means of streptomycin or penicillin when employed in large doses. In the presence of coli organisms, streptomycin with alkalinization should be tried first, followed by penicillin, plus acidification. However, all methods of treatment may fail completely, as they have in the case under discussion. As a rule the infection subsides gradually with development of the patient's resistance, and, in the absence of symptoms, it can be largely disregarded.

SYPHILIS IN THE FATHER

To the Editor:—Will you advise me what antisyphilitic treatment is most likely to secure a healthy child in the following case: The husband, 31, denies infection, but admits having a positive Wassermann reaction for six years. He has had almost continuous treatment with oxophenarsine hydrochloride and bismuth compound for four years. Tests show no reduction in titer. The spinal fluid was normal on two examinations. The wife, 27, is pregnant two weeks. She has had negative reactions to three blood tests in the past year.

M.D., Pennsylvania.

ANSWER.—Even though her husband may have syphilis there is no likelihood that a seronegative woman who has never herself been shown to have the disease will give birth to a syphilitic infant. Antepartum infection of the fetus occurs uniformly via the placenta from spirochetemia in the mother. If the father is responsible for the infection of the fetus, it is through first transmitting syphilis to the mother and her transmitting it in turn to the unborn child. Infection of the fetus with syphilis for all practical purposes does not occur in the absence of maternal disease.

In the present instance the father has had his disease for at least six years, and his treatment has been apparently adequate according to accepted standards. Infectious mucocutaneous relapsing lesions are most prone to occur in the first two years of the disease and are uncommon after four to five years even in the absence of specific treatment. Failure of serologic response in spite of the active and prolonged treatment described is in favor of an infection of long standing. Semen is not infectious in the absence of open lesions of the genital tract. An amount of treatment such as is described would make infectious relapse most improbable, unless one is concerned with chronic relapsing disease, of which there is no indication from the history. The likelihood of transmission of infection to the mother from the father at this time is accordingly remote.

It is unusual to obtain a repeatedly negative blood serologic reaction for syphilis in a reliable laboratory in the presence of untreated syphilitic infection, particularly if the disease is active and recently acquired. On the basis of the information given, one would be forced to conclude that the mother is not infected with syphilis. The mother should be observed once monthly during the pregnancy. She should have a repetition of the blood serologic test for syphilis preferably at each of these visits, but as a minimum in the eighth month of the pregnancy and at the time of delivery. If maternal syphilis is diagnosed treatment with penicillin will give satisfactory results at almost any time in the pregnancy and should be commenced immediately, as described in the section on "The Prevention of Prenatal Syphilis" in the special article by the Syphilis Study Section of the National Institute of Health on the "Status of Penicillin in the Treatment of Syphilis" (J. A. M. A. **136**:877 [March 27] 1948).

Provided the mother remains seronegative for syphilis throughout the pregnancy, no special study of the newborn infant for the disease is necessary. As a final precaution a blood test should be taken on the infant at the age of four to six months, which if negative for syphilis will satisfactorily and completely rule out the possibility of congenital syphilis.

THYMUS GLAND

To the Editor:—In this small town we take care of our newborn babies, using pediatricians in cases requiring help. Of the 2 babies that were autopsied the cause of death was said to have been an enlarged thymus gland. Because of this, I have been routinely making roentgenograms of all infant thymus glands with the surprising result of finding more than one-half of these slightly to greatly enlarged. These infants were referred to roentgenologists for radiation treatment and discharged following a negative roentgenogram.

In Boston roentgenograms were made of the thymus in all children as part of their pretonsillar examination, and those who presented enlargement were not operated on. 1. Are we being slack in not having roentgenograms made of the thymus before tonsillectomy? 2. Am I placing too much importance on the problem?

M.D., Massachusetts.

ANSWER.—The dimensions of the thymus as shown by roentgen examination do not present conclusive evidence that an enlarged gland threatens the life or health of the infant. The thymus is rarely, if ever, sufficiently large to cause pressure on the trachea or the bronchial tree thus causing suffocation; infrequently an abscess or an infiltrating neoplasm might cause pressure on the adjacent organs. The thymus does not produce a hormone, nor is it a gland of internal secretion. The former conception of the status thymicolymphaticus has not been proved, and this condition is no longer accepted as a valid explanation of sudden death in infants or as a constitutional state.

In answering the questions propounded it may be stated briefly: 1. An enlarged thymus gland as shown on the roentgenogram is no longer regarded as an evidence of disease or a threat of sudden death. 2. Surgeons and pediatricians no longer require roentgenograms of the thorax to determine the size of the thymus before performing tonsillectomy.

Long years of investigation have failed to reveal the function of the thymus; its function being unknown, it is obvious that the dysfunction is equally obscure. Continued research may some day clear up the unsolved problem of the thymus gland.

GASTRIC MOTILITY AND ALTITUDE

To the Editor:—What is your opinion regarding a small residue of barium in the stomach six hours after a routine series of roentgenograms of the upper part of the gastrointestinal tract, without demonstrable lesions? Please furnish references on correlation of gastric motility and six hour retention of barium in high altitudes.

Captain, M.C.

ANSWER.—In the absence of any roentgenologically demonstrable duodenal or pyloric stenosis, or any other gastroduodenal lesion, the presence of a small amount of barium in the stomach after six hours is probably not of clinical significance. Fluoroscopic study of gastric peristalsis and ability to empty would be of interest in evaluation, as would a test meal with examination of gastric aspirate after five to seven hours.

A delay in gastric emptying in high altitudes has been reported and attributed to anoxemia of the tissues. It is questionable, however, whether this is merely transitory and attributable to a reflex inhibition of gastric motility secondary to the giddiness and other symptoms commonly experienced in sudden exposure to high altitudes.

Reference:

Nimeh, W.: Emptying of the Normal Stomach in Altitudes, Rev. Gastroenterol. **14**:763-775, 1947.

BROMHIDROSIS

To the Editor:—Could you give me any information on the value of roentgen treatment in bromhidrosis? A patient has been afflicted with this condition for years. Have you any other suggestions as to therapy?

L. C. Gerlinger, M.D., Fostoria, Ohio.

ANSWER.—The query does not state whether the bromhidrosis is general or local. The treatment is similar to that for hyperhidrosis. Roentgen therapy is useful in many cases of local forms. Great care should be used lest excessive doses be employed that lead to untoward results. If moderate amounts of radiation are unsuccessful, it is wise to discontinue and try other methods. Excessive dryness and roentgen burns are worse than the original trouble. The use of chemicals, such as 1 to 10 per cent formaldehyde in alcohol, boric acid solution or powder, sodium bicarbonate 5 per cent in talcum, potassium permanganate, 1 per cent, as a paint, or as wet dressings, 1 to 1,000, is helpful. Aluminum chloride, 25 per cent, is the basis of many commercial preparations. For extreme degrees of hyperhidrosis and bromhidrosis of hands and feet, sympathectomy has been suggested. Iontophoresis is said to be effective temporarily. The patient may be excreting sweat of offensive odor after ingesting drugs such as valerian and asafetida, or foods like onion or garlic. Poor states of general health and emotional upsets may be a background to hyperhidrosis and bromhidrosis.

MALE STERILITY

To the Editor:—What is the newest form of treatment for a man with sperm count of 10,000,000 with 85 per cent motility, 50 per cent at the end of five hours, 85 per cent abnormal forms of all kinds. The wife is normal in every way. I have built up his general health; other physical abnormalities were not noted. He has received anterior pituitary lobe hormone by injection—100 units weekly for twelve weeks.

M.D., New York.

Answer.—More than one specimen of semen should be examined before it is concluded that the foregoing picture represents the patient's average production. If such proves to be the case, a testicular biopsy is indicated. If this shows hypoplasia, degeneration or atrophy of the seminiferous tubules, as is only too probable with semen as poor as the specimen described, then little benefit can be expected from any sort of treatment. If, on the other hand, the germinal epithelium proves to be in fairly good condition, further attempts may be made to stimulate it. The effect of gonadotropic therapy is uncertain and unpredictable, but it sometimes happens that one type succeeds where others fail. Hence equine and chorionic gonadotropins might be tried in the present case. In general, fertility is favored if a patient's basal metabolic rate is maintained at the plus 10 level. Carefully regulated administration of thyroid may be used as needed to accomplish this purpose.

OCULAR HEMORRHAGE

To the Editor:—Please furnish advice regarding treatment of a patient who is 65 years of age, arteriosclerotic, and is myopic—16 D.—in both eyes. He had a choroidal hemorrhage in the macular region of his left eye two months ago with resulting loss of central vision. Vision in his right eye is poor because of corneal opacities following corneal ulcers in childhood. What will (a) prevent any further hemorrhages and (b) improve his vision? O. M. Haarburger, M.D., Cape Town, Africa.

Answer.—(*a*) Rupture of the lamina vitrea in an elderly arteriosclerotic person with high myopia is not rare. The prognosis and treatment of this condition when complicated by macular choroidal hemorrhage is hopeless. He can be assured, however, that he will not become entirely blind, but will likely always be able to find his way about. Treatment with rutin, tocopherol and/or iodides (sodium or potassium) by mouth can be tried. Rest, both local and general, is advisable, and strenuous physical exertion must be avoided. If the arteriosclerosis is accompanied by vascular hypertension, this is particularly important. (*b*) Telescopic lenses may be tried, but the restricted field of view often is worse than the affliction. Full correction of the refractive error is advisable. The patient should be instructed to use his peripheral vision to the full capacity. Simple training along this line is often helpful. Corneal transplant of his left eye might be considered. The vision in this eye, however, might well be permanently affected as the result of nonuse over so long a period.

MALNUTRITION

To the Editor:—How does one go about putting weight on a person? My patient is a young woman of 27, married and has a child age 2. She is 5 feet, 1 inch (155 cm.) tall and weighs 95 pounds (43.1 Kg.). She seems normal in every way; viz., basal metabolic ratio, menstruation, chest, blood (hemoglobin, 78 per cent), development. Her appetite is only fair. I have tried high caloric diet and insulin, but instead of gaining she has lost 2 pounds (0.9 Kg.). I have been tempted to try testosterone propionate, since Dr. Fuller Albright suggested that it is the anabolic hormone. Would it do her any harm? If not, what dosage should I use?

M.D., Canada.

Answer.—The treatment of malnutrition is difficult. Whereas testosterone propionate will promote anabolism of many tissues, it should not be used on an essentially normal person such as the patient in question, because of the tendency to virilism. Furthermore, one can build up tissue only to a limited degree with this agent when one is dealing with an essentially normal patient.

HEMATURIA

To the Editor:—In a man aged 26 years hematuria was discovered for the first time during a routine urinanalysis March 1945. Renal function tests, clotting tests, intravenous pyelogram, intramuscular and intravenous dye injection, roentgenogram of the kidney and genitourinary tract failed to determine the source of bleeding. In July 1946 cystoscopy disclosed normal bladder, ureteral ostia, trigonum and vesical neck; catheters passed readily to both renal pelves; the urine returned clear with normal drip from the right side, slightly bloody from the left. Plain roentgenograms revealed no evidence of stone, and a left retrograde pyelogram revealed a perfectly normal kidney, pelvis and major and minor calices. Hematuria continued without pain or fever. Guinea pig tests in August 1945 and August 1946 were negative; in September 1945 tonsillectomy gave no improvement. From December 1945 to June 1946 cystoscopy and all other tests were repeated. In August 1946 cystoscopy and other tests were repeated with negative results. Hematuria continues in changing amount without interruption up to the present. Please give suggestions concerning diagnosis and treatment.

M.D., New Hampshire.

Answer.—In view of the duration of hematuria and the lack of other symptoms and signs, it is possible that the bleeding originates from one or more varices on the renal papillae or from a small angioma. The latter would be a more likely diagnosis, especially if hemangiomas are present elsewhere over the body. Repetition of the retrograde pyelogram may reveal slight fuzziness of the calices, which would speak for varices. The instillation of 1 or 2 per cent silver nitrate into the renal pelvis might be tried as a means of controlling the bleeding. If hemorrhages are severe enough to cause anemia or other disturbance, a nephrectomy is indicated.

THYROIDECTOMY IN AURICULAR FIBRILLATION

To the Editor:—Should surgery of the thyroid be contemplated in a woman aged 55 with an exophthalmic goiter and a basal metabolic rate of plus 38? She has an auricular fibrillation.

L. Edward Giovine, M.D., Woodside, N. Y.

Answer.—The presence of auricular fibrillation is not a contraindication to a subtotal thyroidectomy for exophthalmic goiter in a woman 55 years of age. The patient should be properly prepared for operation and the basal metabolism reduced to normal with the administration of propylthiouracil supplemented for one week preceding the operation with the administration of iodine. The risk of a thyroidectomy in a patient with heart disease is little greater than in a patient without heart disease, provided that adequate preoperative preparation is carried out.

CARBON DISULFIDE

To the Editor:—A young man, shortly after going to work in a rayon plant where he states that he is exposed to acetone fumes, developed a rather obscure illness consisting of arthralgias and slight fever. Laboratory work, electrocardiograms and appropriate roentgenograms all failed to reveal abnormality. The illness subsided spontaneously, and the patient returned to work. After forty-eight hours, the symptoms returned and again subsided on rest. Can you give me any information as to any toxic reactions to acetone or to the products used in rayon manufacture? Would there be any possible connection between this patient's exposure and his illness? M.D., Pennsylvania.

Answer.—Acetone, of all industrial solvents, is one of the least toxic. In attempts to fix tolerable limits 3,000 parts per million of acetone in air have been rejected as too stringent by one group devoted to standard provisions. This may be contrasted with the standard for carbon disulfide, which unofficially is 10 parts per million. Should this patient be employed in the manufacture of viscose rayon, the possibility of exposure to highly dangerous carbon disulfide should be explored. This substance provides the outstanding danger in that chemical process. Manifestations are legion, but the absence of the normal corneal reflex is the most suggestive single indication of chronic carbon disulfide involvement. Adequate discussions of the action of carbon disulfide may be found in: Johnstone, R. T.: "Occupational Medicine and Industrial Hygiene," St. Louis, C. V. Mosby Company, 1948, and Gordy, S. T., and Trumper, M.: Carbon Disulphide Poisoning, *Indust Med.* **9**:231, 1940.

TELEVISION SCREENS

To the Editor:—Is there harmful effect produced by the television screen? If so, how can this be minimized? Alfred Lilienfield, M.D., New York.

Answer.—It is believed that harmful radiation from the household television screen does not occur. Some experimental television screens may emit harmful radiation. This is not certain and it is being studied.

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A PRESENT DAY RATIONALE FOR THE TREATMENT OF URINARY TUBERCULOSIS

Chairman's Address

REED M. NESBIT, M.D.
and
A. WAITE BOHNE, M.D.
Ann Arbor, Mich.

Streptomycin has been demonstrated to be effective in the treatment of many types of urinary tuberculosis, with the result that a new and hopeful attitude regarding the prognosis of the disease prevails. But new discoveries are often accepted and utilized by the public without an adequate orientation in thinking regarding the ultimate changes which may be brought about by the new agency. An example in point is modern air transportation. The public knows that our continent can be spanned by air in one day; yet New York and San Francisco are still five days apart in the thinking of most persons because of our orientation to earthbound travel. The present discussion is related to a reorientation of our thinking in the matter of treating urinary tuberculosis; for it is now evident that we should treat all patients with this disease by prolonged sanatorium care and streptomycin therapy whether the infection appears to be clinically bilateral or unilateral, and the following evidence is presented in support of this view.

Urologists have generally agreed that unilateral caseating renal tuberculosis does not heal spontaneously and, for this reason, have always advocated nephrectomy in its treatment. Likewise it is known that the prognosis in bilateral renal tuberculosis is poor, although there are several reports in the literature enumerating patients with bilateral disease who have survived for remarkably long periods of time.

Most urologists today are using streptomycin in treating urinary tuberculosis. There is a unanimity of opinion regarding the general effectiveness of this form of treatment, but time and experience are as yet lacking for an adequate evaluation of the method. Therefore, the precise indications for its use, the exact dosage and the optimal duration of treatment are yet to be disclosed by experience. How soon these factors can be determined is a matter of conjecture. The Veterans Administration is attempting to determine the optimal dosage, duration of treatment and method by observing large groups of patients treated by various plans of streptomycin administration; but even under the controlled conditions that prevail in this large scale study the final results will be long in appearing and will be related largely to a special group of patients—young male subjects.

The urologist today properly wonders how he should approach the matter of planning a course of treatment in any case of urogenital tuberculosis. His indecision is obviously not concerned with the treatment of frank bilateral disease, for there are no alternate methods in that situation. Streptomycin offers the only hope of suppressing the disease in such a circumstance. His concern is related rather to deciding between alternate regimens when he is confronted by a patient with unilateral infection. It is the purpose of the present inquiry to discuss the rationale of streptomycin therapy in the management of unilateral renal tuberculosis. Our investigation must include an evaluation of three important factors that have a significant bearing on the problem: (1) the effectiveness of streptomycin in the healing of tuberculous lesions in the urogenital tract and the risks inherent in streptomycin therapy, (2) the pathologic aspects of the disease and (3) the prognosis of patients who are treated for unilateral disease by nephrectomy alone.

EFFECTIVENESS OF STREPTOMYCIN IN TUBERCULOUS LESIONS IN THE UROGENITAL TRACT; RISKS OF TREATMENT

Most investigators agree that streptomycin will cause an arrest or an improvement in the majority of the tuberculous lesions that occur in the urinary tract. At the present time the best results appear to have been attained in two groups of cases: (1) those having residual cystitis following nephrectomy for clinically unilateral disease and (2) those who have lesions of one or both kidneys which can be diagnosed by the observation of tubercle bacilli and pus in the urine obtained by ureteral catheterization, but which show no roentgen evidence of destruction in the kidney. Recently Lattimer and others[1] asserted that only renal lesions of this type have responded favorably to streptomycin therapy. These investigators have had a large experience in the antibiotic therapy of urogenital tuberculosis, and their opinions, which are based on accurate and exhaustive case studies, may be looked on with respect. The experience of these authors, however large, is limited, and their declarations that advanced renal lesions—i. e., lesions which are visible in the pyelogram—will not become arrested by means of streptomycin therapy, cannot be regarded as final or determinative. There are already several reports from competent and reliable observers enumerating cases of this type, in which there was healing under antibiotic treatment and the patients remained free from

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From the Department of Surgery, University of Michigan Medical School, Ann Arbor, Mich.

Read before the Section on Urology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

[1] Lattimer, J. K., and others: Streptomycin in Treatment of Genito-Urinary Tuberculosis, J. Urol., to be published.

pus and tubercle bacilli for long periods of time. A case in point is one which we now have under our observation in the clinic of the University of Michigan Hospital (case report).

L. W., a 22 year old woman, had suffered from moderately advanced bilateral pulmonary tuberculosis for four years, which was complicated by tuberculous peritonitis in 1946. At that time asymptomatic pyuria developed, which prompted an investigation of the urinary tract, and bilateral destructive renal lesions were demonstrated. Streptomycin therapy was begun in June 1947, 1.5 Gm. per day being given for seventy days while she remained in the sanatorium. The urine became free from pus and organisms after streptomycin therapy and had remained free from all evidences of infection after twelve months. Ninety days after streptomycin treatment was begun the patient was found to have a ureteral stricture at the bladder level on the right, and also evidence of a massive cicatrix in the left kidney which appeared to threaten its survival. A right cutaneous ureterectomy was performed in October 1947, and the patient was clinically well as of the date of writing. Pyelographic examinations in May 1948 revealed no abnormalities on the right side as well as a remarkable improvement of the left kidney, and the urine was still free from pus or tubercle bacilli that could be demonstrated by all methods of identification.

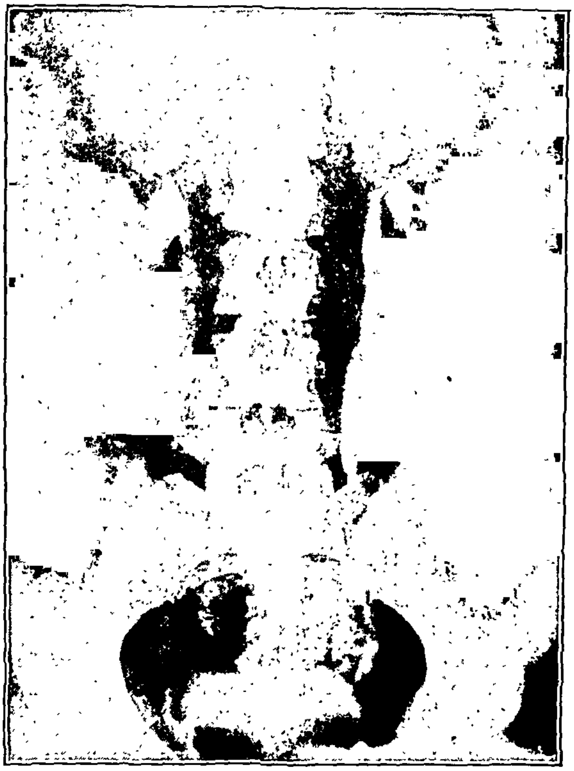

Fig. 1.—Pyelogram prior to streptomycin therapy.

Final opinions regarding the optimal streptomycin dosage and the duration of treatment must be delayed until adequate data have accumulated. At the present time there appears to be a tendency toward the favoring of smaller dosages than those originally employed. Among the reasons for this attitude are the factors of expense and the avoidance of toxicity. Neither of these items should be regarded as extravagant when the suppression of a lethal disease is the object of the expenditure. At the present moment the evidence in favor of a dose smaller than 2 Gm. per day in the control of urinary tuberculosis is at best tenuous, if not completely lacking. In our own small series of 29 cases that have been followed up sufficiently long for significant observation, it has been interesting to note that the only failures or relapses have occurred in patients who were treated with doses of streptomycin that were less than 2 Gm. per day. To be sure, most of the patients have suffered some loss of vestibular function, and a few have demonstrated impairment of hearing, but they are alive and, although a bit wobbly, are all enjoying remissions, and we and they are content with the outcome.

PATHOLOGIC ASPECTS OF THE DISEASE

Any rationale for the treatment of disease must be predicated on a basic understanding of its pathologic aspects. This is particularly true of urinary tuberculosis, which is a metastatic disease, and the blood-borne organisms are invariably deposited in both kidneys as well as in other tissues of the body. The classic study of Harris [2] demonstrated that tuberculosis of the urinary tract occurred frequently among tuberculous children who had bone involvement but rarely among children who had only pulmonary lesions. Conclusive evidence regarding the universal bilaterality of the disease was furnished by the monumental studies of Medlar [3] in 1926. This investigator examined serial sections of the kidneys from persons who had died of pulmonary tuberculosis and found that bilateral cortical infections were present in all the kidneys. The majority of the lesions were minimal in size and showed evidences of healing. Only a few of the hundred and fifty thousand sections that he studied showed lesions that the clinician might be able to demonstrate by pyelography. Yet all the kidneys were doubtless capable of producing tuberculous

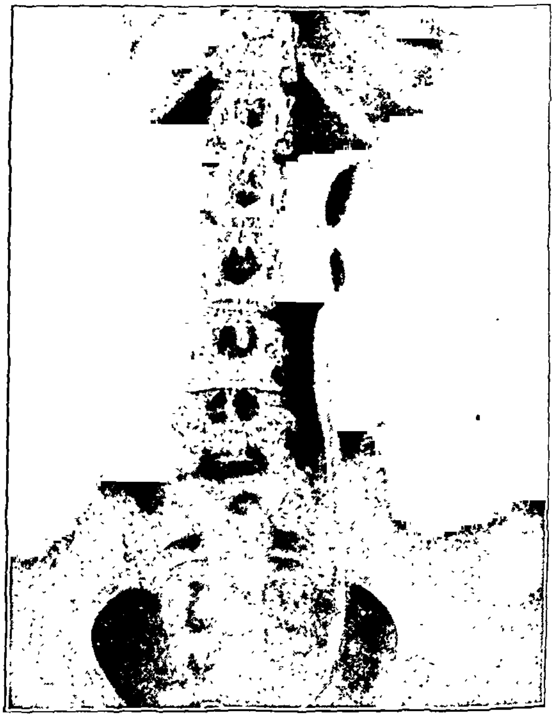

Fig. 2.—Retrograde pyelograde pyelogram (left) after streptomycin therapy, disclosing constriction of the pelvis. (The urine was normal.)

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[2] Harris, R. J.: Tuberculous Bacilluria: Its Incidence and Significance in Patients Suffering from Surgical Tuberculosis, Brit. J. Surg. **16**: 464-484, 1929.

[3] Medlar, M.: Renal Infection in Pulmonary Tuberculosis; Evidence of Healed Tuberculous Lesions, Am. J. Path. **2**: 401-413, 1926.

bacilluria. Additional data relating to this subject have been recently provided by this same pathologist. At the Boston meeting of the American Urological Association in May of this year (1948) Dr. Medlar read a report entitled "Post Mortem Compared with Clinical Diagnosis of Genito-Urinary Tuberculosis in Adult Males."[4] His observations were based on 5,424 necropsies performed on male subjects over 16 years of age at Bellevue Hospital. He found that nearly all renal infections were bilateral and that other organs of the urogenital tract invariably were involved. One of his conclusions based on this study was:

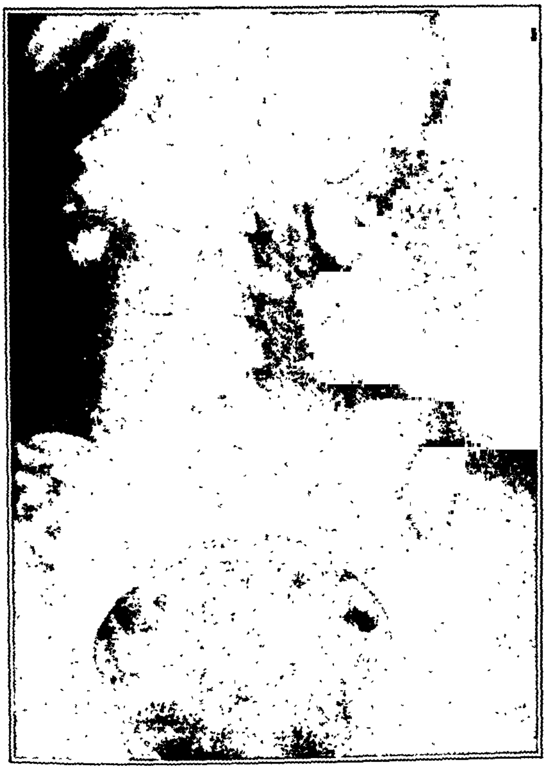

Fig. 3.—Excretory pyelogram after streptomycin therapy, showing dilatation of the left side of the pelvis above the constrictive lesion.

> The clinical management of a patient with genito-urinary tuberculosis should be based upon a clear concept of the pathogenesis of tuberculosis as a whole. If the intention is to prevent a further spread of the disease within the system by surgical removal of the organ in which tuberculosis is recognized, the data presented in this paper indicate that already other organs are affected and the surgical procedure is too late to obtain the desired results.

PROGNOSIS WITH NEPHRECTOMY ALONE FOR CLINICALLY UNILATERAL DISEASE

Another factor which must be considered in viewing the present problem is that which relates to the prognosis following nephrectomy for clinically unilateral disease. This important facet of the picture is one that unfortunately has received only scant attention by urologists in the past. To be sure, there is an extensive literature devoted to the discussion of various other aspects of the problem, and there has been a wide acceptance of the doctrine that nephrectomy is indicated in patients who are demonstrated clinically to have tuberculosis confined to one kidney. The clinician has perhaps been forced to depend on the implication that when the disease was properly diagnosed and appropriately treated the patient got well, for he has been told repeatedly that nephrectomy must be performed if the patient is to recover; but analyses of the results of nephrectomy have been conspicuously lacking in the literature. An outstanding contribution in this regard is that which was reported by Wildbolz[5] of Switzerland in 1925. Wildbolz reported that 59 per cent of his nephrectomized patients became cured after operation, the majority of the remaining patients dying of renal or some other form of tuberculosis. There have been only three series of cases reported in this country which can be utilized in deriving conclusions regarding the value of nephrectomy: that of Giles[6] in 1937, dealing with 96 patients operated on at the Squier Clinic; the Mayo Clinic series of 1,131 patients reported by Emmett and Kibler[7] in 1938, and 153 cases that were reported by Nesbit, Keitzer and Lynn[8] in 1945. These three series of cases provide an aggregate of 1,380 patients who were treated in recognized clinics and in whom the criteria for operation were such that a reasonable expectation for cure must have prevailed at the time that nephrectomy was performed. Yet only about half of the patients were alive five years after operation. Emmett and Kibler analyzed their cases on the basis of survival in relation to the urinary observations in

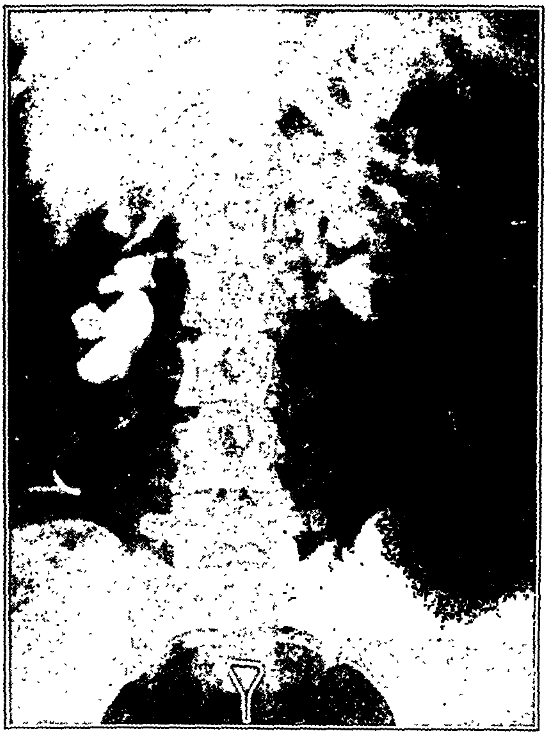

Fig. 4.—Pyelogram made one year after streptomycin therapy and seven months after right cutaneous ureterostomy, with apparent regression of the constrictive lesion on the left. (The urine was still normal.)

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[4] Medlar, M.; Spain, D. M., and Holliday, R.: Post-Mortem Compared with Clinical Diagnosis of Genito-Urinary Tuberculosis, J. Urol., to be published.

[5] Wildbolz, H.: Renal Tuberculosis, J. Urol. **21**: 145-179, 1929.

[6] Giles, H. H.: Tuberculosis of Kidney with Special Reference to Follow-Up Results in Squier Clinic, Surg., Gynec. & Obst. **64**: 1046-1050, 1937.

[7] Emmett, J. L., and Kibler, J. M.: Renal Tuberculosis; Prognosis Following Nephrectomy Based on Preoperative Observations in "Good" Kidney, J. A. M. A. **111**:2351-2356 (Dec. 24) 1938.

[8] Nesbit, R. M.; Keitzer, W. A., and Lynn, J. M.: The Prognosis of Renal Tuberculosis Treated by Nephrectomy, J. Urol. **54**: 227-234, 1945.

the "good" kidney and observed that when the urine was free from pus cells the chance for a five year cure was 43.5 per cent and the chance for a five year cure when the urine from the good kidney was free from both pus cells and tubercle bacilli was 50 per cent. The Michigan series roughly paralleled these figures, with two thirds of our cases showing five year clinical cures when the urine from the good kidney was free from pus and tubercle bacilli. These clinical results manifestly demonstrate the value of operation in treating this devastating malady, but a candid assay of the data also indicates how dismally nephrectomy has failed in nearly half the cases.

A recent reanalysis of our cases was made for the purpose of determining the factors influencing the prognosis. Complete data are available in 121 of the cases and are enumerated in the accompanying chart. These data reveal that the incidence of genital or pulmonary lesions is about the same among the patients enjoying good results as those who died or who became worse after operation, whereas the incidence of severe cystitis and the condition of the good kidney do importantly influence the prognosis. It is clearly evident that the most favorable prognosis is to be encountered in the patient who has minimal or no cystitis and whose "good" kidney is free from evidences of either obstruction or infection; but freedom from these involvements does not guarantee a favorable outcome of nephrectomy. The criterion which appears to stand out as an indication of a bad prognosis is the presence of severe cystitis. Only 4 of the patients who died had been free from this complication. Nevertheless, one third of the cured patients had had severe cystitis. It is obvious that the prognosis in any case of renal tuberculosis is hazardous and that nephrectomy is not a specific cure for the disease.

*Summary of Data on Patients Treated by Nephrectomy**

	Genital, B. & J. Lesions, Etc.		Pulmonary Lesions			Cystitis		Pyelograms (Good Kidney)		Urine in Good Kidney		
	Absent	Present	None	Minimal	Moderately or Far Advanced	None or Minimal	Severe	Normal	Hydronephrosis	Normal	Pus	Tubercle Bacilli
Cured patients	34	12	41	3	2	32	14	41	1	41	5	1
Improved but not cured	13	9	20	1	1	19	3	20	0	21	1	1
Total	47	21	61	4	3	51	17	61	1	62	6	2
Living but worse	3	1	3	1	0	3	1	1	?	0	4	1
Dead	21	28	35	9	5	4	45	9	11	29	20	17
Total	24	29	38	10	5	7	46	10	11+	29	24	18

* There were 27 deaths due to renal tuberculosis, 14 (miliary 4) to other types of tuberculosis, 6 to hydronephrosis and 2 to Addison's disease (total 49). Fifteen of the cured patients and 4 of the dead patients had only minimal or no cystitis, no genital or pulmonary disease and normal observations in pyelograms and normal urine on the side that was not diseased.

SUMMARY AND CONCLUSIONS

A reorientation of our habits of thinking in the matter of treating urinary tuberculosis is necessitated by the advent of streptomycin. Clinicians are now treating several types of urinary tuberculosis with prolonged sanatorium care and full courses of streptomycin therapy: six months should be regarded as the minimum of sanatorium care while longer periods of time are often necessary, and ninety to one hundred and twenty days of antibiotic therapy are recommended. The dosage of streptomycin is at present variable—the matter being in the investigative stage—but many have found from 1.5 to 2.0 Gm. per day to be the most effective dosage. The types of conditions that are now being treated in this manner include bilateral renal tuberculosis, residual cystitis following nephrectomy and clinically unilateral kidney lesions when there are no pyelographic evidences of the disease. At the present time most urologists are treating, by nephrectomy, the clinically unilateral lesions of the kidney that can be demonstrated by roentgenogram, and many are advocating short preoperative and postoperative courses of streptomycin to prevent the traumatic spread of the disease. When the rationale of streptomycin therapy is based on the knowledge that urinary tuberculosis is universally bilateral and that nephrectomy alone cures only about half the patients, it would seem to be illogical to withhold any therapeutic measure which might enhance the complete healing of the patient's tuberculosis. The nephrectomized patient should be afforded the same advantages of modern therapy that are considered appropriate for other patients suffering from bilateral renal tuberculosis.

Surgical removal of the grossly diseased kidney is a well accepted principle, but perhaps in the future nephrectomy can be relegated to a position below that of streptomycin and rest in the order of importance. Since it has been shown that even ulcerative renal lesions will sometimes heal during treatment with streptomycin, it would be reasonable to withhold surgical treatment, at least temporarily, in all cases of clinically unilateral renal tuberculosis. The patient should be placed on a regimen of strict rest in a sanatorium and should receive 2.0 Gm. daily of streptomycin for sixty days. At the end of this time a survey should be made to determine, by urinalyses and retrograde pyelography, the results of treatment. When the studies indicate conspicuous evidences of healing the plan of treatment should be continued for an additional sixty days, with repeated observations of the state of the lesion thereafter. The patient should then complete a minimum period of six months of sanatorium care or longer if necessary, in accordance with the needs for treatment.

If at the termination of the initial sixty day period, the patient's symptoms remain unaltered and pus and tubercle bacilli are still present in the urine obtained by ureteral catheter, nephrectomy would be indicated. Postoperatively streptomycin therapy should be continued for sixty days longer and the patient kept at rest for the prescribed six month period, or longer if need be.

Although this plan certainly will not prove efficacious in eliminating the necessity for nephrectomy in all instances, it promises, when nephrectomy is carried out, to diminish the likelihood of miliary dissemination during operation and to militate against wound disruption following nephrectomy, and it will also serve to influence favorably the subsidence of other metastatic lesions which might still be active in the patient, particularly those in the remaining kidney, thus enhancing his chances for recovery. Our reorientation in thinking regarding the treatment of urinary tuberculosis must be predicated on a realization that operation has failed dismally in the treatment of this disease, for in the past the nephrectomized patient has had only an even chance for survival.

CONTROL OF CANCER OF THE UTERUS

Report of a Ten Year Experiment

CATHARINE MACFARLANE, M.D.
MARGARET C STURGIS, M.D.
and
FAITH S. FETTERMAN, M.D.
Philadelphia

During the ten years prior to writing, members of the Department of Gynecology of the Woman's Medical College of Pennsylvania have been conducting a clinical research on the periodic pelvic examination of presumably well women. This research was undertaken for the purpose of determining the value of such examinations in detecting cancer of the uterus, particularly the cervix, in an early and curable stage and in detecting lesions of the cervix commonly believed to predispose to cancer.

In 1938 and 1939, we succeeded in interesting the women of Philadelphia in this project. As a result, 1,319 white women, 30 to 80 years of age, presumably well, volunteered to come for pelvic examination twice a year for five years.

Table 1.—*Pelvic Cancers*

Location	Number of Cancers
Cervix uteri	4
Corpus uteri	2
Ovary	1
Vaginal wall	1
Total	8

Most of the volunteers appreciated the importance of the undertaking as a contribution to medical science as well as of value to themselves. With others it was a matter of passing interest. When told once or twice that they were in good condition, they grew weary of well-doing and dropped from the ranks. Some died. Some moved away. Nevertheless, we were able to make a five year report at the 1944 meeting of the American Medical Association in Philadelphia on 545 continuing volunteers.

At that time, Dr. Ludvig Hektoen, Chairman of the Committee on Clinical Research of the American Medical Association, expressed the opinion that this group of women should be followed up immediately. The examining physicians and the majority of the volunteers were eager to do this. Efforts were made to rekindle the interest of those who had dropped from the ranks. As a result, we are able to report today on 732 volunteers who have been examined more or less regularly over a ten year period.

In the first examination of the 1,319 presumably well women, three squamous cell cancers of the cervix were discovered (volunteers 68, 174 and 430). Two of these were discovered on microscopic examination of areas of papillary erosion that had aroused no suspicion of malignant growth and that had been excised by the Sturmdorf technic. The third was observed on biopsy of an extensive and suspicious looking area of papillary erosion. These 3 women were treated with radium and showed no evidence of recurrence nine years after treatment.

A cancer of the uterine body was discovered on the first examination of volunteer 1140. On account of medical handicaps, treatment was limited to radium and roentgen rays. There was recurrence after nine years.

A fourth cancer of the cervix was discovered on the eleventh visit of volunteer 527. There were no symptoms, but examination revealed a smooth red polypoid growth, 1 cm. in diameter, protruding through the external os. This proved to be an adenocarcinoma. Radium needles were inserted into the growth for 1,300 mg. hours, and 2,400 mg. hours were given in the uterine cavity. Unfortunately, pyometra, general systemic infection and severe gastrointestinal symptoms developed, which made it impossible to give adequate treatment with either radium or roentgen rays. The patient died of recurrence after two years.

Table 2.—*Social Status and Childbearing*

Category	In Original 1,319 Volunteers	In Continuing 732 Volunteers
Single nulliparous women	188	80
Married nulliparous women	224	113
Parous women	907	539

Adenocarcinoma of the endometrium was discovered on microscopic examination of a myomatous uterus removed supravaginally from volunteer 898 in March 1942. She showed no evidence of recurrence after six years.

A cystic tumor of the ovary was discovered on the ninth visit of volunteer 176. Operation showed this to be a rapidly growing malignant tumor, with extension to the peritoneum. This patient died of recurrence after sixteen months.

Table 3.—*Incidence of Cancer of the Cervix in 3,000 Gynecologic Patients*

Number of Cases	Type	Age	Cancer of Cervix
1,000	Single white nulliparous	20-77	6
1,000	Married white nulliparous	20-79	14
1,000	Married white parous	20-79	37

A cancer of the anterior vaginal wall was discovered by volunteer 1037 (a physician) just before she was due for her fifteenth visit. The growth was excised and irradiated, but the volunteer died of recurrence in the lungs after three months.

This brings up to eight the cancers of the pelvic organs discovered in our continuing group of 732 volunteers over a period of ten years. The chief interest

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Read before the Section on Obstetrics and Gynecology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

lies in the four cancers of the cervix. Each of these occurred in a woman who had borne a child. Four cancers of the cervix seem a small number to have developed in a group of 732 women over a period of ten years.

Our volunteers are classified according to social status and childbearing in table 2.

Deducting from the parous group 10 women whose children were born by cesarean section (whereby trauma to the cervix was eliminated), we still have 529 parous women in the continuing group.

Table 3 shows the incidence of cancer of the cervix in white women, 30 to 80 years of age, according to a previous study of admissions to the gynecologic services of the Woman's Hospital and to the Hospital of the Woman's Medical College.

While the incidence of cancer would naturally be greater in patients admitted to hospitals than in presumably well women, it is interesting to compare these figures with the observations in our research group.

TABLE 4.—*Benign Lesions of the Pelvic Organs*

Type of Lesion	Number
Inflammatory lesions of the cervix	489
Myomatous tumors of the uterus	193
Mucous polyps of the cervix	140
Cystic tumors of the ovary	40
Leukoplakic areas of the cervix	3
Papillomas of the cervix	2
Tuberculous ulcer of the vagina	1
Total	868

TABLE 5.—*Inflammatory Lesions of the Cervix*

Lesions	Number of Lesions
Endocervicitis	68
Cervicitis	53
Cervicitis with erosion	
Simple	100
Follicular	38
Papillary	105
Nonspecified	125
Total	489

On this basis, we might expect to find one cancer of the cervix in our 193 nulliparous women and twenty cancers of the cervix in our 529 parous women. So far, over a period of ten years, we have found no cancers of the cervix in our nulliparous group and only four cancers of the cervix in our parous group.

Some light is thrown on this situation when benign lesions of the pelvic organs discovered in the volunteer group are considered. In addition to the eight cancers, eight hundred and sixty-eight benign lesions of the pelvic organs were discovered in the volunteers from the begining of the research until April 1, 1948.

Most important of these benign lesions from the point of view of cancer are the 489 inflammatory lesions of the cervix. These are classified in table 5.

Some 214 of these inflammatory lesions of the cervix have been eliminated by operation, conization or cauterization. My colleagues and I believe that the development of some cancers of the cervix has been prevented by the elimination of these inflammatory lesions.

This research has cost a great deal of time, money and energy. Its results are not spectacular. Perhaps its greatest value has been educational. We must admit that in the control of cancer, education is a mighty weapon.

Our clinic is called a Cancer Research Clinic. It differs from prevention or detection clinics in that, after the original group of volunteers was recruited, no new volunteers were added. The volunteers made no financial contribution. The examining physicians gave their services without charge. The Woman's Medical College gave clinic space and nursing service.

The expense of secretarial service, of a part time medical statistician, stationery, supplies, postage, record cards, examination of pathologic specimens and other such items varied from $150 to $200 per month. This was met by grants from the American Medical Association, the International Cancer Research Foundation, the New York Medical Women's Association, the Pennsylvania Division of the Women's Field Army of the American Cancer Society and the Philadelphia Division of the American Cancer Society and gifts from private persons.

We can claim that as a result of the research three cancers of the cervix were discovered in an early stage, were treated promptly and showed no signs of recurrence after nine years; two hundred and fourteen inflammatory lesions of the cervix were discovered and eliminated, and 1,000 women and their relatives and friends have been taught the value of periodic pelvic examination.

CONCLUSIONS

Early cancer of the cervix and lesions predisposing to cancer can be detected in presumably well women by means of periodic pelvic examination. Every woman 30 years of age and over who has borne a child should be examined once a year or twice a year if inflammatory lesions of the cervix are present. Inflammatory lesions of the cervix should be eliminated.

136 South Sixteenth Street.

ABSTRACT OF DISCUSSION

DR. B. Z. CASHMAN, Pittsburgh: For more than thirty years some of us have been stressing the importance of periodic examinations for detecting cancer of the cervix, but it was Catherine Macfarlane who had the vision, industry and persuasiveness to induce 1,000 women to submit to examinations *faithfully and persistently. You have heard her results.* This is an excellent record and establishes the value of periodic examination in detecting cancer of the uterus in the curable stage. The low incidence of carcinoma of the cervix in her series is striking. This is suggestive that her policy of cleaning up the inflammatory lesions and the polypi of the cervix prevented cancer of the cervix. We, of the University of Pittsburgh, have been interested in the same problem but made a different approach. We have carefully examined the cervix of every woman who passed through our hands in office and hospital. If there was pronounced cervicitis present, or if symptoms of cervicitis were not relieved by conservative treatment, deep cauterization of the cervix was advised. If the patient was scheduled for surgical treatment, regardless of its nature, the opportunity was used to treat cervicitis by deep cauterization under the same anesthesia. After a series of 10,000 cases had been accumulated we attempted to determine in how many of these patients cancer of the cervix subsequently developed. Three surveys have been made. Only 3 cases of cancer of the cervix have been found in this entire group. Whether we prevented the development of carcinoma of the cervix by eliminating chronic cervicitis, as we formerly believed, or whether we destroyed cancer in its incipient stages, is of academic interest only. The important fact is that invasive cancer occurred in only a small percentage ((0.03 per cent) of this group. Until we learn more about cancer of the cervix, the laborious methods of Dr. Macfarlane and Dr. Papanicolaou, and of our own or some similar procedure, seems to be the only true preventive measures now known. One does not need to wait for the discovery of the cause of cancer. One does not need to wait even for better methods of treatment. Doctors have now the means for eliminating cancer of the cervix if it is discovered early. It is not a problem for gynecologists alone, for gynecologists see only a small percentage of the women of this country. The opportunity lies in the hands of the general practitioners.

Dr. Augusta Webster, Chicago: This is a unique study, one which I believe to be of great significance. These examinees were carefully screened, and no persons with symptoms were accepted for this project in clinical research. The same physicians have conducted the ten year study with 732 of the original 1,000 examinees cooperating. The continuity of the project, from the point of view of participation of both patient and physician, is a most valuable factor; too often changing personnel leads to variation in the interpretation of the same condition. The term precancerous has long been under fire, and the purists have preferred to avoid its use. The clinician, however, has always been suspicious of the relation of certain conditions to malignancy, but has lacked specific evidence to support the idea. Seven hundred and thirty-two women between the ages of 30 and 80 years were in this group who had a goodly number of minor, seemingly harmless, pelvic lesions, but in whom only eight pelvic malignant growths developed over a ten year period; four of these were cervical cancers. The four cervical malignant growths were discovered in the incipient stage, resulting in nine year cures for 3 patients. Over two hundred benign conditions were treated during the ten year period. The relatively large number of benign conditions eradicated and the small number of cancers found would certainly suggest that at least some precursors of cancer were destroyed. In apparently healthy persons many conditions may be discovered by careful physical examinations while in an asymptomatic subclinical phase. At the Cancer Prevention Center of Chicago, of 6,000 apparently healthy women, 1,015 were found to have a lacerated hypertrophied cervix, 1,288 had erosions and 223 had polyps. These figures overlap, as some women had more than one condition. In 318 instances, or 4.9 per cent, biopsy was recommended to rule out malignancy. All these persons were referred to their own family doctors for diagnostic study and treatment. It is not the intention of the Cancer Detection Clinics to alarm the examinee or to encourage other than conservative treatment of conditions found. Rather the objective is to promote effective preventive medicine and thus to insure longer life and better health to the examinees.

Dr. J. Hofbauer, Cincinnati: A rational approach in prevention of malignant conditions of the uterine cervix requires adequate knowledge of the specific etiologic and conditioning factors involved. The weight of opinion favors the view that there is an earlier predisposing phase when cellular elements that have been stimulated to proliferation present pictures of potential malignant disorder. Proliferation of polygonal cells—derivatives of the undifferentiated basal infra-epithelial cells—with the formation of one or more layers, has been observed as the cervical response to a variety of morphogenetic stimuli, notably chronic irritation, gestation and disturbed balance of the specific endocrine mechanism of the uterine cervix. It is these tissue changes with their associated deviations in functional equilibrium which have been invoked as the prologue of the cervical epithelial drama. The specific mechanism, however, accountable for the transformation of such hyperplastic preinvasive epithelium into carcinoma, is not known. The concept that cervical malignant conditions represent the sequelae of trauma incident to childbirth, cervical lacerations and erosions had remained unchallenged long enough to have become the traditionally accepted explanation. Observations made by my colleagues and me of unmistakable early cervical carcinoma in areas distinct from lacerations or erosions necessitated the search for other etiologic factors. Our experimental studies showed for the first time that the implantation into the musculature of laboratory animals of bits of fresh anterior pituitary substance evokes a rapid sequence of extensive growth phenomena of the cervical epithelium and of the uterine glands. Correlation of these observations with the recognition of occurrence of hyperplastic changes in the prepituitary as the result of repeated pregnancies created the conception of the specific hormone-induced growth phenomena in the uterine cervix—the anterior pituitary and ovarian—as predisposing factors of malignancy. Pursuit of studies concerned with the identification of inhibitors of growth responses to hormonal stimuli seems to hold the key to progress in the fascinating subject.

Dr. Catherine Macfarlane: Last year in this country more than 16,000 women died of cancer of the uterus. At the present time early detection is the best method available to curb the ravages of this disease. Early detection is a function of the general practitioner. In this mighty conflict he forms the first line of defense.

EMPYEMA

BRIAN BLADES, M.D.
Washington, D. C.

Empyema of the thorax has become a rare disease. This is particularly true of the postpneumococcic variety and applies to other pleural abscesses resulting from trauma and other causes. A few years ago it was a well known lesion with a significant mortality rate and troublesome morbidity and the source of controversial opinions on details of treatment. Students of medicine were warned of the frequency of complicating empyema following pneumonia, and residents dreaded the management of drainage tubes and suction apparatus. Today it is possible and probably likely that young surgeons might not have the opportunity to study an old-fashioned case of empyema of the thorax during an extended training period.

The first dramatic reduction in the incidence of postpneumococcic empyema followed the almost universal use of the sulfonamide drugs for pneumonia. For example, in 1,250 patients with pneumonia treated with the sulfonamide drugs, Dowling [1] reported an incidence of 1.9 per cent of complicating empyema. Even greater reductions in the frequency of complicating empyema following pneumonia have been reported by other authors.[2]

The almost universal use of penicillin in infections of the respiratory tract has further reduced the frequency of pleural abscesses to a figure ranging from 0 to 0.08 per cent in most series. This remarkable agent has the advantage over the sulfonamide derivatives of a strong antibacterial action when given systematically and the retention of its potency in the presence of blood and pus. Moreover, the proved low toxicity of the mold makes it possible to give enormous doses both parenterally and locally with a minimal chance of dangerous or distressing side effects. The addition of streptomycin to the antibiotic armamentarium of treatment has furnished another effectual method to combat organisms not vulnerable to penicillin.

It becomes apparent that empyema should be considered as a medical disease, with the goal of aborting frank abscesses rather than waiting for a well formed localized abscess to develop. It is important, however,

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From the George Washington University School of Medicine, Department of Surgery, Washington, D. C.

Read before the Section on Surgery at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

[1] Dowling, H. F.: Personal communication to the author.

[2] Hurwitz, S., and Stephens, H. B.: J. Pediat. **14:** 11, 1939. Schwartz, L.; Flippin, H. F., and Turnbull, W. G.: Ann. Int. Med. **13:** 2038, 1940.

to remember that the use of these agents, which have made empyema a rare lesion, may attenuate abscess formations and change the clinical manifestations of the disease so decidedly that a diagnosis frequently cannot be made, if one thinks in terms of the type of empyema common before antibiotic therapy was available.

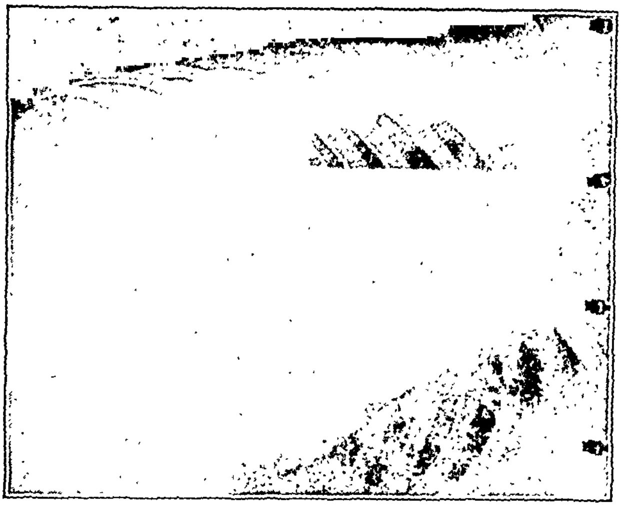

Fig. 1.—*Roentgenogram taken in lateral decubitus position, demonstrating a huge empyema cavity and empyema necessitans and showing the thoracic wall at the site of empyema necessitans.*

During the past war, in a study made by Blades, Hamilton and Dugan [3] of 24 cases of empyema treated with penicillin, it appeared that the early and vigorous parenteral and intrapleural use of penicillin, as soon as infected fluid appeared in the pleura, would abort the formation of frank abscess in many cases. Further experience with this type of treatment verifies the original impression. It was pointed out, however, by the same authors, that if frank thick pus forms, surgical drainage should be established and that sterile empyema is not cured empyema. Subsequent studies with both penicillin and streptomycin in the management of empyema have not altered these observations.

Proper employment of antibiotics in the treatment of empyema requires two considerations. First, the continued use of antibiotics, either locally or parenterally, without surgical intervention, after the formation of thick pus which cannot be aspirated, and therefore precludes early and complete reexpansion of the lung, should be condemned. Second, the realization that after severe pneumonia, coupled with pleural effusion, there may be some residual empyema, usually in the posterior gutter, which may escape detection for weeks or months.

An example of the misuse of penicillin in a case of traumatic empyema may be illustrated by case 1.

REPORT OF CASES

Case 1.—A young man, 23 years of age, suffered severe and multiple injuries in a serious automobile accident, including a laceration of the liver and multiple rib fractures. A hemothorax developed on the right, which received little attention, probably because of the severe abdominal injuries which required a laparotomy. Figure 1 shows the appearance of the chest eight weeks after the accident. In preceding weeks blood had been aspirated from the pleura and penicillin injected into the space. The fluid in the pleura gradually thickened and assumed the appearance of frank pus. No organisms were seen in the cultures. A week before operation thoracentesis failed to reveal pus. It is obvious that at this time the fluid was so thick that it could not be withdrawn through an ordinary needle.

A huge sterile pleural abscess developed, and after eight weeks empyema necessitans developed, pointing on the anterior thoracic wall. A thoracostomy for drainage of the empyema and incision of the thoracic wall abscess resulted in prompt healing, with no apparent permanent disability.

It is probable that early and vigorous attempts to free the pleura of fluid would have prevented the formation of the infected hemothorax and consequent empyema. The seriousness of the injury and the circumstances surrounding the accident made this somewhat difficult. Even after the hemothorax became infected, the possibility of decortication of the lung might have been considered, provided that the patient's general condition did not preclude a thoracotomy. The important lesson to be gained from this case, however, is that the use of penicillin produced a sterile abscess, but the foreign body in the pleura prevented reexpansion of the lung and healing, and, finally, by purely mechanical means sterile pus produced empyema necessitans.

This is an extreme example of the misuse of penicillin. These circumstances are more likely to occur in a case of traumatic empyema. It appears that the greatest difficulty results from the false sense of security obtained by sterilization of pus in the pleura without regard for the mechanical factors involved in the healing of an empyema cavity.

An interesting and treacherous attenuation of empyema which may follow antibiotic therapy is illustrated in case 2.

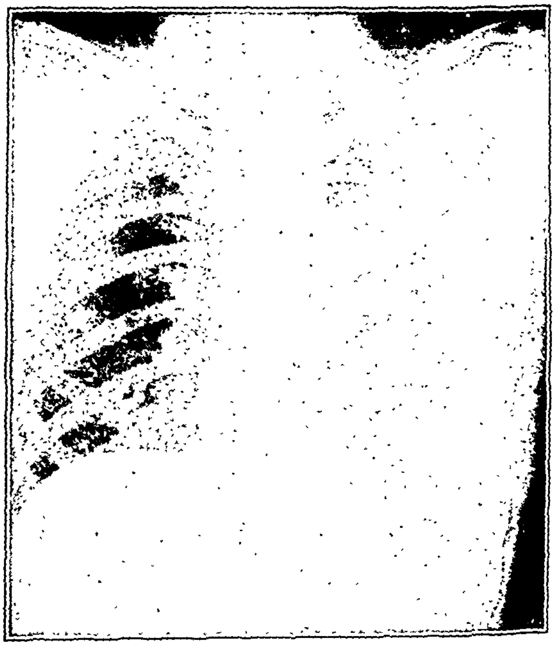

Fig. 2.—*Roentgenogram revealing pleural effusion which accumulated rapidly after the onset of acute illness. The fluid was sterile.*

Case 2.—A young man, 21 years of age, had a severe cold and was confined to his home for about two weeks with low grade fever, cough and expectoration. After this period he experienced a sudden chill and high temperature, ranging from 39 to 40 C. (102 to 104 F.), and massive pleural effusion developed rapidly. Penicillin was given in doses of 50,000 units every three hours and later increased to 100,000 units every three hours. This treatment was started immediately after the chill and fever. The fluid in the chest accumulated rapidly, and thoracenteses were required every two or three days for a period of about four weeks. Cultures of the pleural fluid revealed no organisms (fig. 2). After repeated aspirations, the pleural fluid seemed to disappear and the patient's temperature fell to normal with the exception of low grade fever every two or three days. The appearance of the roentgenogram of the chest six months after the onset of illness is shown in figure 3.

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[3] Blades, B.; Hamilton, J. E. and Dugan, D. J.: Surgery **17**: 572, 1945.

Repeated examinations of sputum had revealed nothing of significance, and the tubercle bacilli had not been identified. The appearance of the roentgenogram of the chest was thought to indicate tuberculosis, and this patient was advised to observe strict bed rest for an indefinite period, until a positive diagnosis had been established. The patient observed strict bed rest for four months, and seven months after the onset of his illness the drainage of a small pleural abscess situated in the posterior gutter resulted in a cure. The pus contained Streptococcus hemolyticus.

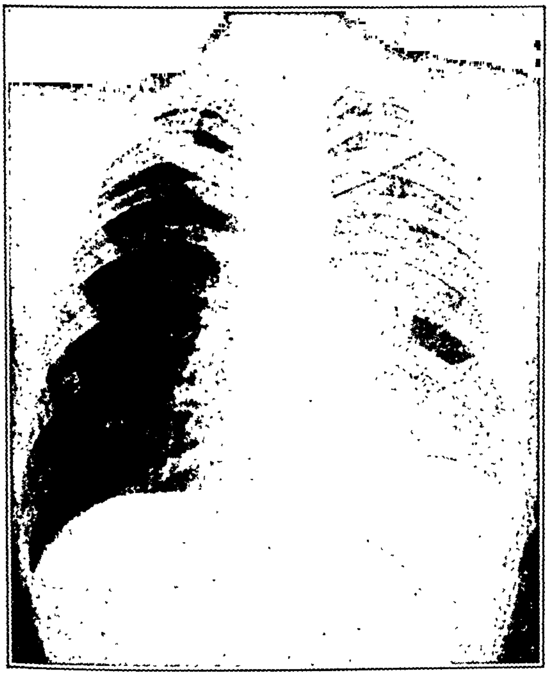

Fig. 3.—Appearance of the chest six months after the onset of acute illness. A diagnosis of tuberculosis was made based on the roentgenogram.

This is an example of attenuation of severe streptococcic pneumonia and pleural effusion with the mistaken diagnosis of tuberculosis. Before the antibiotics were available, the erroneous diagnosis of unresolved pneumonia in cases of empyema of the thorax was common. The frequency of this mistake has been tremendously reduced, but the error still occurs. Three cases similar to case 2 have been observed, and the patients with residual empyema were thought to have unresolved pneumonia. This impression delayed necessary surgical drainage for several months.

COMMENT

In this connection it is important to remember that parenteral administration of penicillin or streptomycin may render a pleural effusion temporarily sterile. If an antibiotic is also employed locally, the possibility is even greater. After weeks or months the bacteria debilitated by the antibiotic sometimes revive enough to multiply and produce an active purulent pyogenic infection.

The obvious advantages of penicillin over the sulfonamide derivatives in the treatment of pneumonia and in cases of potentially infected traumatic hemothorax are so apparent that they require no comment. Certain principles of the use of streptomycin in the treatment of pyogenic empyema will be mentioned later.

Based on my own clinical experiences and the experimental work of Romansky, the following therapeutic approach is suggested. In cases of frank pneumonia with classic severe onset—fever, chills and other classic symptoms—penicillin should be administered immediately. A dosage of 300,000 units in one of the repository products, e. g., penicillin in wax and oil or similar preparations, is suggested. If aqueous penicillin is to be used, a dosage of 25,000 to 50,000 units every three hours is desirable. In cases with known bacteremia or in established staphylococcic infections, 300,000 units should be given two to four times daily.

If pleural fluid appears, it is important that the local treatment be withheld until an attempt has been made to identify the organisms. An initial precise bacteriologic diagnosis may rule out the possibility of a tuberculous infection or establish it and serve as a guide for subsequent antibiotic therapy. In this connection the importance of the use of penicillinase in the laboratory deserves mention. Unless the precaution is observed, the cultures may remain sterile because of the inhibitory effect of penicillin. When penicillinase is employed, this inactivation is eliminated and a positive culture may be obtained.

The dangerous toxic effects of streptomycin have already been mentioned and are well known. Reductions in dosage of this agent have greatly diminished these side actions, but they still exist and must be considered. It is important to record, therefore, that the intrapleural use of streptomycin is followed by a rapid rise in blood levels, and, if the antibiotic is to be employed locally in the pleura, reductions in parenteral dosage may be advisable until the peak of the blood level from local use has been reduced. The experimental and clinical studies of Beattie and his co-workers have established that the maximum level from intrapleural use of streptomycin is reached in from one-half to one hour after it is placed in the pleura and then falls rapidly. It is practically eliminated within four hours. This important consideration is worth recording. Since experimental and clinical evidence indicates the desirability of using the antibiotic combination, that is, combining penicillin and streptomycin, there is even more importance in precise bacteriologic diagnosis before treatment begins.

CONCLUSION

Failure to establish a definite bacteriologic diagnosis in the seriously ill patient should not be an absolute contraindication to antibiotic therapy, particularly in the case of penicillin. The significant toxic effects of streptomycin, however, make it important not to employ this agent unless there are absolute indications based on bacteriologic evidence. There are few exceptions to this principle. Relatively few organisms, which are not vulnerable to penicillin but respond to streptomycin therapy, produce pleural abscesses. The principal ones are the hemolytic influenza bacillus, Friedländer's bacillus and a few rare gram-negative bacteria.

If the intrapleural use of an antibiotic is indicated in the presence of fluid or blood in the pleura, it should be combined with systemic administration of the proper agent. If the fluid or blood continues to thicken and form frank pus, drainage or decortication plus drainage should be employed.

ABSTRACT OF DISCUSSION

Dr. Edward M. Kent, Pittsburgh: There is general agreement among surgeons in this country with everything that Dr. Blades has said concerning empyema thoracis. The two most significant observations have been that new problems have arisen in the treatment of empyema as a result of the use of antibiotics and that this complication of pneumonia resulting from the pneumococcus is seen much more rarely now than it has been in the past. It may be felt by some that it is unusual to present a paper on a problem of decreasing clinical incidence. However, I consider it highly important to do so in this instance. There are two chief reasons for this attitude: First, it is the ultimate goal of the members of the medical profession to do themselves out of a job, as it were, and strides of significant proportions have been made in that direction. However, we tend to lose sight of these accomplishments because the scope of medical practice has been extended more rapidly than it has been reduced. We are making progress in the fight to lessen or eliminate the need of surgery in the treatment of infections. Similar progress is being made in other fields of surgical endeavor excepting, of course, the repair of the results of trauma and the correction of anatomic defects. Secondly, I consider the presentation of this matter timely because, as Dr. Blades has so clearly pointed out, there are certain new problems which have been created as the result of the use of the antibiotics in the treatment of pneumonia and empyema. Dr. Blades has shown us what these new problems are, how they are anticipated and the way that he has managed them from a clinical point of view. In addition, he has sounded certain warnings which we all will do well to heed. I, for one, am in complete agreement with what he has said.

Dr. Thomas H. Burford, St. Louis: I would like to underscore what Dr. Blades has said concerning the increasing complexity with which the problem of empyema is now vested. It is true that what empyema has lost in frequency it has gained in complexity. At the Barnes Hospital, where my associates and I are now seeing approximately a twentieth of the amount of empyema that we saw in the days before sulfonamide drugs and antibiotics, we encounter problems of a vastly altered nature, and it is significant that in only a small percentage of the cases of empyema that we now see—particularly of the postpneumonitic type—is drainage done. They require a more radical type of approach. One patient whose disease was diagnosed as virus pneumonia partially recovered from the primary disease with a stiff regimen of antibiotics. A residual shadow in the posterior right side of the chest was later observed and diagnosed as carcinoma. It was not until a needle aspiration was done that it was found to be empyema. Because of the fact that the process had existed for about three months when seen, we did not drain but elected to resect the entire empyema sac. Another patient had almost certainly had typical pneumonia of pneumococcic type and had been treated intensively with penicillin. He came to us with a chest full of pus, from which nothing could be grown twelve weeks after the discovery of the empyema. Again, primary drainage was not done. A primary decortication was performed with prompt recovery. I would like to say a word about the problem of empyema in childhood. It is particularly important, now that practically all children with pneumonia are treated intensively from the very beginning with one or a combination of antibiotics, that the treatment of empyema, which may in rare cases develop, not be neglected. It is still mandatory in the very young group to institute "water-seal" intercostal drainage as soon as infected fluid is discovered.

AUREOMYCIN, A NEW ANTIBIOTIC

Results of Laboratory Studies and of Clinical Use in 100 Cases of Bacterial Infections

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Unpublished data made available to us[1] suggested that the new antibiotic, aureomycin, was of low toxicity, was effective in vitro against a large variety of gram-positive and gram-negative bacteria and was particularly effective in experimental infections with rickettsias and with viruses of the psittacosis-lymphogranuloma venereum group. Clinical trials to determine its field of usefulness, therefore, seemed warranted. The results of the oral use of this antibiotic in 100 cases of a variety of bacterial infections are of sufficient interest to warrant this report. A brief résumé of the results of laboratory studies carried out in the course of this clinical study is also included. Further details will be presented in separate communications.

BACTERIOLOGIC STUDIES

Sensitivity of Bacteria.—Tests for sensitivity to aureomycin were carried out by tube dilution or streak plate methods on one hundred and eighty-six strains of pathogenic bacteria recently isolated from patients at the Boston City Hospital.[2] Strains of hemolytic streptococci, pneumococci, gonococci and meningococci were almost completely inhibited by aureomycin in concentrations of 1 microgram per cubic centimeter or less. Staphylococci and most strains of gram-negative bacilli, including typhoid and other Salmonella, were inhibited by 25 micrograms per cubic centimeter or less. Only strains of Proteus vulgaris and of pyocyaneus were moderately resistant and required from 100 to 250 micrograms per cubic centimeter for complete inhibition. There was no evidence of cross resistance with penicillin, streptomycin, polymyxin or bacitracin in any of the organisms tested. On a weight basis aureomycin was less effective than penicillin against most of the coccic organisms, but was about as effective as streptomycin against most of the gram-negative bacilli.

Stability.—Aureomycin was supplied as the hydrochloride in a dry powder in sealed ampules and in capsules. In these forms it has maintained its potency apparently unaltered for at least seven months at room temperature. It has also retained its activity for long periods in solutions that are kept frozen at —20 C. Concentrated solutions (2 mg. per cubic centimeter) in distilled water at p_H 4 retained their activity for over two weeks at 4 C. and also at 37 C. The potency of solutions in a slightly alkaline medium, in concentrations of 200 micrograms per cubic centimeter incorpo-

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This is a summary of material presented by the authors at a Conference on Aureomycin at the New York Academy of Sciences, July 21, 1948. This work was carried out with the technical assistance of Clare Wilcox, Janice M. Bryan and Paul F. Frank and was aided by a grant from the *United States Public Health Service. Dr. E. Buist Wells* participated in the latter part of this study.

[1] The data were provided by workers of the Lederle Laboratories Division, American Cyanamid Company, who also provided generous supplies of the antibiotic.

[2] The strains were isolated and identified in the Bacteriology Laboratory of the Mallory Institute of Pathology by Marion E. Lamb and A. Kathleen Daly.

rated in blood agar or 8 micrograms per cubic centimeter in saline solution, plasma or broth deteriorated rather rapidly at 37 C. and somewhat less rapidly at 4 C.

Other Factors Influencing Aureomycin Activity.—The size of the inoculum influences the concentration of aureomycin required to inhibit the growth of bacteria as tested by the tube dilution method, but has little effect, within a wide range of inoculum size, on the end points which are obtained by a surface streak method. Aureomycin is effective only against vigorously multiplying organisms, but not against fully grown or resting cultures. Aureomycin is much more effective in an acid than in an alkaline medium—the reverse of streptomycin. Attempts to demonstrate an aureomycin-inhibiting substance similar to penicillinase in filtrates of aureomycin-resistant organisms or in extracts of disrupted cells of a number of bacterial species were without success. The activity of aureomycin on cultures is not diminished by incubation in a candle jar, but higher degrees of anaerobiasis may decrease its effectiveness. Filtration of solutions of aureomycin in water, broth or urine through Seitz, Mandler or sintered glass filters does not appreciably reduce the activity of the aureomycin.

Resistance.—There was no significant tendency for the development of resistance to aureomycin in organisms either in vitro or in vivo. Of six strains of organisms repeatedly subcultured on graded concentrations of aureomycin, only one, a strain of Aerobacter aerogenes, increased in resistance thirty-two fold during thirty transfers, and no further increase in resistance occurred during forty additional transfers; the other five strains retained their original sensitivity throughout seventy subcultures. In contrast to streptomycin, resistant variants could not readily be obtained by exposure of large numbers of bacteria to high concentrations of aureomycin. All organisms of the same species isolated from the same patient before, during and after treatment with aureomycin for varying periods up to one month or longer were equally sensitive to this antibiotic.[3]

ABSORPTION AND EXCRETION

Aureomycin appears rapidly in the urine and is excreted continuously for two or three days after a single dose of 0.5 or 0.75 Gm. The highest concentrations, ranging up to 256 micrograms per cubic centimeter, are present in the urine from two to sixteen hours, and the maximum rate of excretion in the urine occurs between four and eight hours after the dose, suggesting that the optimum interval between oral doses should be about six to eight hours. Activity equivalent to between 12 and 15 per cent of a single orally administered dose can be recovered in the urine with the crude methods available.[4] Plasma levels after oral doses of up to 1 Gm. every six hours have usually been found to be about 2 micrograms per cubic centimeter or less, but the methods used were not satisfactory. Aureomycin could not be detected in bile obtained from the common bile duct during oral administration of the antibiotic, although it was not inactivated by bile in vitro.

CLINICAL RESULTS

The number of cases of various bacterial infections, the range of dosage used and a rough estimate of the clinical effect in 100 patients is shown in the table. Most of the patients in whom the results are listed as "doubtful" showed definite clinical and bacteriologic evidence of improvement during treatment with aureomycin, but either the results were transient or the role of the antibiotic in effecting these results could not be evaluated. The doses that were used were necessarily empiric and were increased whenever possible, in the same or in subsequent cases when the results were not optimal. No other chemotherapy or antibiotics were used during the aureomycin administration, although such agents had previously been given without success in some of the cases, particularly those with infections of the urinary tract. The results in some of the groups of cases may be summarized briefly.

Gonococcic Urethritis.—The over-all results in these cases with the doses used were satisfactory, but they were distinctly inferior to those obtained with a single injection of 300,000 units of penicillin in a prolonging agent. A number of different dosage schedules were used. Failures were most frequent among patients treated during a single day with two or three doses, or with a total of 1.5 Gm. or less. In patients receiving such doses, urethral discharge was usually still present on the day after treatment was given even when gonococci could not be demonstrated in smears or cultures at that time. Larger doses given for two days gave results approximating more closely those obtained with penicillin in the same clinic.

Summary of Results of Oral Aureomycin Therapy in 100 Patients with Bacterial Infection

Diagnosis	Number of Patients	Total Dose		Results		
		Grams	Days	Good	Doubtful	Failed
Gonorrheal urethritis, males	66*	1-3	1-2	49	11	6
Pneumococcic pneumonia....	4	5-20	5-10	4	0	0
Meningococcemia, acute......	1	4	3	1	0	0
Typhoid †	5	3-39	13-22	1	2	2
Salmonella enteritis, severe..	2	5-7	3-8	1	0	1‡
Salmonella suipestifer bacteremia (vertebral and psoas abscesses)...........	1	21	11	0	0	1‡
Severe infections of the urinary tract...........	16§	3-28	3-28	6	15	2
Escherichia coli bacteremia..	1	22.5	15	0	0	1
Relapsing fever (?)...	1	9-11	5-6	0	0	1
Urethritis (not gonococcic)..	2	4	7	2	0	0
Typhoid carrier.............	1	23	31	0	0	1
Total........................	100	...	...	64	28	15

* Drs. Thomas F. Kaiser and Francis C. Regan and Mrs. Helen Trousdale assisted in the study of these cases.

† Four of these cases were in children; the fifth was in an adult.

‡ This patient also received 20 mg. intramuscularly every twelve hours.

§ Seven of these patients were given two separate courses of aureomycin for relapses of infection and are each listed twice under "Results."

Pneumococcic Pneumonia.—Of the 4 patients only 1 was over 60 years old and had a severe illness with jaundice, and in him treatment was started on the fourth day. The others were under 25 years old, and treatment in them was begun on the first or second day of their illness, which was mild or moderate. Each of the 4 patients had a single lobe involved, and only 1 had bacteremia before treatment was started. In each instance the temperature reached normal and the patient was clinically much improved within eighteen to thirty-six hours after the first dose of aureomycin. Pneumococci disappeared rapidly from the sputum and could not be identified by any method after the second day of treatment. The results in these cases were comparable to those obtained with adequate doses of penicillin or sulfadiazine.

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[3] Paine, T. F., Jr.; Collins, H. S., and Finland, M.: Bacteriologic Studies on Aureomycin, J. Bact. 56: 489 (Oct.) 1948.

[4] Collins, H. S.; Paine, T. F., Jr.; Wells, E. B., and Finland, M.: Urinary Excretion of Aureomycin (Preliminary Report), Proc. Soc. Exper. Biol. & Med., to be published.

Meningococcemia.—One patient with headache, high fever and diffuse and rapidly spreading rash was treated eighteen hours after the onset of symptoms. The patient was much improved and afebrile within eighteen hours after the first dose. A blood culture, taken before the first dose, was positive for group I Meningococcus, and subsequent cultures were negative.

Typhoid Fever.—Four of the 5 cases of typhoid were in children, and in them treatment was started between the fifth and tenth day of the illness. They all had positive blood cultures before treatment, and all cultures of blood, urine and stools were negative after two or three days of aureomycin therapy. Symptomatic improvement began soon after treatment in only 1 case, but was steady and more gradual over a few days in the other 3. The fifth patient was 60 years old, and aureomycin was started in him four days after a relapse of infection with severe symptoms and bacteremia, which persisted for six days after this therapy was started. The patient then gradually improved, but his course was complicated by intestinal hemorrhage and by symptoms suggesting a perforation.

Typhoid Carrier.—One patient was known to have positive stool cultures repeatedly for at least a year before treatment was started and was the probable source of at least 2 fatal cases in a nursing home. She was given 250 mg. by mouth every eight hours for thirty-one days. During this time daily stool cultures were made, and only 1, obtained eight days after treatment was started, was positive for typhoid bacilli; the other stool cultures were all negative, but a culture of duodenal drainage material obtained on the last day of therapy was positive for typhoid bacilli. The stools again became positive two weeks after the treatment was stopped. The patient's gallbladder was subsequently removed, and its contents yielded a pure culture of typhoid bacilli. Common duct bile obtained by T tube after the operation in this case did not inhibit the action of aureomycin. Oral therapy with aureomycin was resumed after the operation, but there was no evidence of antibiotic activity in the bile during therapy with doses of 0.5 Gm. every six hours.

Salmonella Infections.—The illness in each of the 3 patients with Salmonella infections was unusually severe. The enteritis in 1 of the patients with an infection due to S. newport was improved, and in this patient the stools became formed and less frequent after aureomycin therapy, but the other patient with a similar infection with bacteremia died. The causative organism could not be recovered from the stools after treatment was started in the former, but they persisted in the latter throughout three days of treatment. In the patient with S. suipestifer bacteremia, the organisms persisted in the blood throughout eleven days of oral and intramuscular aureomycin therapy. A large intervertebral abscess and bilateral psoas abscesses were found at autopsy, and the organisms were cultured from the pus of these abscesses, from the cardiac blood and from other organs post mortem.

Colon Bacillemia.—A woman with colon bacillus bacteremia associated with jaundice, enlarged liver and an epigastric mass was improved clinically during treatment, but positive blood cultures were obtained and chills recurred after several days of aureomycin therapy. This patient died after an intestinal hemorrhage, and there was no autopsy.

Urinary Tract Infections.—The 16 patients with infection of the urinary tract who were chosen for treatment with aureomycin, with the exception of 1 with acute pyelonephritis occurring during pregnancy, all had infections of long duration, had failed to obtain any prolonged remission from many different types of therapy and had many complicating factors which militated against a favorable response. Most of them had had prolonged urinary retention, frequent instrumentation, prostatectomy, urolithiasis and recurrent acute and chronic cystitis and pyelonephritis. In the majority, the urine obtained just prior to aureomycin therapy yielded a pure culture of a single organism. Only 4 of these patients were hospitalized during the period of aureomycin therapy.[5]

In general, the pyuria in these patients diminished significantly during treatment and disappeared entirely in half of the patients while the treatment was still being given. Symptomatic relief occurred at the same time in most instances. The specimens of urine became highly acid and remained so throughout the treatment. Cultures of the urine became and remained sterile during treatment in most of the patients. In some of them, however, strains of proteus and pyocyaneus, and in 2 instances colon bacilli, either first appeared or persisted during aureomycin therapy. Infection recurred within a few days after this treatment was stopped in most of these patients, and either the same or different types of organisms were then found. The most persistent organism was Proteus vulgaris, but Pseudomonas aeruginosa also could not be eradicated. These organisms, as already noted, were the most resistant to aureomycin. Good results of a permanent nature were, therefore, infrequent in these cases of chronic infections of the urinary tract. Temporary relief, either slight or moderate, resulted in two thirds of these patients.

Nonspecific Urethritis.—Two patients were treated for urethritis which had persisted in spite of repeated treatment with penicillin, sulfonamide drugs and streptomycin. Cultures of the urethral discharge were negative for gonococci in both cases, and in 1 patient a pleuropneumonia-like organism was isolated. In the latter, a course of 9 Gm. of aureomycin by mouth over a period of six days resulted in fairly prompt symptomatic improvement with complete disappearance of urethral discharge, and subsequent cultures were negative. The other patient received 11 Gm. in five days and had rapid symptomatic improvement. His discharge had completely ceased before treatment was ended, and the infection was completely gone within eleven days.

TOXICITY

Toxic effects were minimal and infrequent. The commonest complaint during large oral doses of aureomycin was looseness of the bowels, with frequent and bulky stools, but true diarrhea was uncommon. Normal bowel action again occurred when treatment with the drug was discontinued or when the dose was temporarily decreased. Nausea and occasionally vomiting occurred after one or more doses in a few patients, but could not always be related to the treatment. An occasional patient with cystitis complained of a disagreeable sensation in the pelvis, which may have been related to the high acidity of urine during treatment with large doses. No other symptoms were noted.

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[5] Seven of these 16 patients received two separate courses of aureomycin about two or three weeks apart.

Anemia attributable to the drug did not occur, and no depression in the cells in the granulocytic series was observed. There was no evidence of renal irritation as manifested by rising nonprotein nitrogen level in the blood, albuminuria or the appearance of cellular elements in the urine. There were no instances of jaundice or any other evidence of liver impairment developing after treatment was started. No fever or rashes definitely ascribable to the drug were observed. Drug fever was suspected in a child who had a recurrent elevation of temperature without symptoms after being almost afebrile after treatment for typhoid. A single dose of 200 mg. given subsequently, after the temperature had remained normal, failed to reproduce fever or symptoms, so that the relation of the drug to the recurrent fever could not be evaluated.

CONCLUSIONS

These observations suggest that aureomycin has definite antibacterial activity against many micro-organisms, including coccic and bacillary forms, and it may prove useful in the treatment of infections with organisms that are resistant to penicillin or to streptomycin.

Aureomycin given by mouth, in the doses used, appeared to have a definite beneficial effect in coccic infections. The results in cases of gonorrhea were inferior to those obtained with adequate doses of penicillin. The results in some of the patients with typhoid and Salmonella infections appeared to be favorable, but in most of the cases the effects were equivocal. In the infections of the urinary tract, considering the types of cases treated, the results were favorable and were probably comparable, if not superior, to those obtained with the use of streptomycin or sulfonamide drugs in similar cases. Infections with Proteus vulgaris and Pseudomonas aeruginosa, however, were not much benefited by aureomycin. The only evidence of toxicity was the occurrence of loose bowel movements when large doses were given by mouth. Resistant organisms did not develop during treatment with aureomycin, and resistant variants could not readily be produced in vitro.

While the observations of other workers, both in experimental animals and in human beings, suggest that the major field of usefulness of aureomycin may be in the treatment of infections with rickettsias or with viruses of the psittacosis-lymphogranuloma venereum group, the results in the present cases suggest that aureomycin may be useful in a large variety of bacterial infections. It therefore deserves a more extended clinical trial.

Hemometakinesia.—The concept of hemodynamics, to which the term hemometakinesia has been applied, provides, it is believed, a more rational approach to the management of certain forms of peripheral vascular disease than now exists. This concept is based on certain observations concerning the physiology of the circulation which established the presence of spontaneous and even rhythmic fluctuations in the volume of organs, primarily attributable changes in the volume of the blood within the part. These observations, which suggest that there is a continuous shifting back and forth of blood from one part of the body to another, seem to indicate the existence of a well regulated "borrowing-lending" mechanism which permits the body to utilize its limited blood volume in the most effective manner to meet variations in local requirements.—DeBakey, Michael E.; Burch, George E., and Ray, Thorpe, *The Journal of the Michigan State Medical Society*, June 1948.

TREATMENT IN A PSYCHOSOMATIC CLINIC

Preliminary Report

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The treatment of the great number of patients with bodily disturbances and with emotional reactions occurring as part of the human organism's response to adverse life situations is an urgent medical problem. The present report is based on experiences in treatment with 889 such patients seen in a newly organized medical outpatient clinic over a period of two years. Six hundred and ninety of them were followed up for more than a year.

METHOD

The patients ranged in age between 5 and 69 years. Sixty per cent were female, and 40 per cent were male. They suffered chiefly from bronchial asthma, hypertension, vasomotor rhinitis, migraine, urticaria, hypoglycemia, dermatitis, peptic ulcer, mucous colitis, ulcerative colitis and phenomena of muscle tension.

In addition to the usual medical history and examination with appropriate laboratory tests, a personality study was done. Special note was made of the family and cultural background. The state of the patient's health was correlated with events, overt activities, attitudes and emotional responses. The objective was to understand the motivations and mechanisms of disturbed function. Treatment was aimed at altering the disordered pattern, so that the patient might achieve more adequate utilization of his capacities toward a greater satisfaction and a more salutary integration. Insofar as was possible, physiologic changes, qualitative and quantitative, were correlated with the emotional reactions and behavior pattern of the patient under varying life situations. Then an attempt was usually made to explain to the patient what had been happening to him, in order that perplexity might be replaced by a grasp of the dynamic mechanisms at work. The past experiences and reactions were integrated with the present in order to increase insight into his life adaptation.

RESULTS

Of the 690 patients, 113 were considered by their physicians to be symptomatically and basically improved. Two hundred and thirty-four were considered only symptomatically improved and 343 unimproved. One hundred and ninety-one of the 343 patients in the unimproved category attended the clinic for less than a month, and of these 82 received no treatment. If those who received no treatment were excluded, 19 per cent were basically improved, 38 per cent were symptomatically improved and 43 per cent were unimproved.

Thirty-one per cent discontinued coming to the clinic without any explanation. Follow-up studies revealed that about 60 per cent of these felt that they had improved. They were not, however, included in either of the aforementioned improved categories.

The designation symptomatic improvement was applied to those patients who had shown a definite and

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sustained diminution in signs and symptoms over a period of at least a year. Basic improvement depended on the symptomatically improved persons having encountered a major threat in their life situation and having shown a reorientation in outlook by meeting it in a more constructive way and without symptoms.

EVALUATION OF VARIOUS THERAPEUTIC PROCEDURES

No absolute distinctions between therapeutic procedures could be made, and no one method could be administered in pure culture. Nevertheless, each physician delineated as far as was possible the treatments used and the value of each. The chief procedures and the number of cases in which they were used successfully were as follows:

Reassurance and emotional support	309
Free expression of conflicts and feelings	304
Advice regarding attitudes, habits and activities	173
Explanation of psychophysiologic processes	140
Symptomatic drug therapy	123
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Reassurance and emotional support employed the human warmth of the physician and was helpful in enhancing the strength, faith and determination of the patients as well as in releasing inhibitions and repressions. It implied an understanding and tolerant attitude on the part of the physician and included recognition and praise for the assets and achievements of the patient. It also involved an unswerving interest in and concern for whatever problem or question the patient brought to the doctor. In short, without becoming too identified with the patient's problems the physician attempted to play the role of a strong authoritative, but not authoritarian, thoroughly dependable friend of the patient.

Free expression of conflicts and feelings through verbalization promoted a release of tension and often resulted in relief from anxiety and resentment and less need to act out emotional conflicts in a socially undesirable manner. Patients repeatedly stated that the free expression of their conflicts had given them a sense of relief and had aided in an understanding that was of the greatest help to them. Many complained of previously not having been permitted to talk, of having been told that there was nothing wrong, that they imagined they were ill or that they should forget their symptoms.

There appeared to be no short cut for allowing the patient to find out about himself by discussing himself frankly with a tolerant physician. When direct questions were asked bluntly the patient often felt that he was being cross examined, and an attitude of antagonism resulted. When he was allowed to talk at his own pace, however, relevant conflicts and significantly traumatic situations were relatively easily brought out.

The patients were encouraged to discuss the advantages and disadvantages of a given situation before making important decisions. Helping them to take independent action led to the development of a greater feeling of security and capacity to deal with ensuing problems. However, at certain times, when the psychodynamics had been clarified, direct practical advice was helpful in enabling them to break away from unhealthy fixed habit patterns. Such advice, coming from a physician, relieved the patient of responsibility and guilt, so that he could make constructive decisions which might otherwise have been delayed indefinitely.

An analysis of the emotional development during infancy, childhood and adult life was elicited by a biographic review and also by allowing the patient to associate freely about significant life events and his reactions to them. Recall and interpretation of dreams through spontaneous association by the patient facilitated the uncovering of emotional conflicts. The feeling of security engendered and the release of emotional repression aided in establishing healthier patterns of bodily function and in the development of more mature attitudes and behavior.

Intravenously administered "sodium amytal" was of value in the alleviation of troublesome symptoms, in the elucidation of dynamic mechanisms and in gaining therapeutic leverage.[1]

Frequently considerable improvement was achieved without the verbal expression of insight. Many patients who appeared to have developed some comprehension of the dynamics of their illnesses expressed it rarely or not at all. In some of these pride and a need for a feeling of self sufficiency interdicted an admission of improved integration. However, it was often conveyed indirectly to the physician.

The recording and measurement of physiologic disturbances and correlating them with the emotional reactions and behavior of the patient in varying life situations served to promote an understanding of the total biologic response and was often followed by improvement. This method was especially helpful to patients who came to the clinic perplexed about the nature of their disorder or apprehensive of its being a serious or perhaps fatal disease.

Interviews with other members of the family led to improvement in interpersonal relationships and decrease in anxieties and resentments in the home. These were usually carried out by the physician, but sometimes by the social service worker. The Social Service Department was also helpful in obtaining employment, arranging for convalescent care, making plans for children of patients and carrying out follow-up studies.

Drugs were used to afford symptomatic relief. They were usually employed to tide the patient over a difficult period in his illness, and their use was discontinued as soon as possible.

FORMULATION

It has been possible satisfactorily to treat in a medical outpatient department patients with various psychosomatic disorders and effect fundamental and lasting improvement in 1 out of 5 and at least symptomatic improvement in more than half of the group treated.

The bodily disorders and diseases were viewed as biologic reactions of defense against threats arising out of problems of interpersonal and situational adjustment.

The clinical course also gave support to the concept that the patient, in an effort to deal with adversity, invoked faulty emergency measures[2] which often led to illness and to tissue damage. The aim of the reaction patterns was often at variance with the conscious purposes of the patient,[3] and this accentuated the conflict.

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[1] Horsley, J. S.: Narcoanalysis, New York, Oxford University Press, 1943. Grinker, R. R., and Spiegel, J. P.: War Neuroses in North Africa: The Tunisian Campaign (Jan.-May 1943), New York, Josiah Macy Jr., Foundation, 1943. Ripley, H. S., and Wolf, S.: The Intravenous Use of Sodium Amytal in Psychosomatic Disorders, Psychosom. *Med.* **9**: *260-268 (July-Aug.) 1947.*

[2] Rado, S.: Developments in the Psychoanalytic Conception and Treatment of the Neuroses, Psycho. Analyt. Quart. **8**: *427-437* (Oct.) 1939.

A variety of types of relationship between patient and physician was found useful, as was flexibility with regard to the number and frequency of visits.

The depth of treatment attained depended on the ability of the patient to use his resources in developing improved patterns of reaction, rather than on the frequency of the interviews or the duration of the treatment. Diethelm[4] recognized the importance of flexibility in carrying out a plan of treatment. This was later emphasized by Alexander and French.[5]

An average of only nine hours per patient was spent, and no patient received more than eighty-five hours of clinic time during the two years of follow-up. At the end of the period of evaluation many of the patients were still being seen at intervals, but usually not more often than once a month.

The following assets presaged improvement:

1. Recognition of failure of present patterns of adjustment and desire for help
2. Confidence in and ability to cooperate with physician
3. Flexibility of personality structure
4. Disorder of recent origin
5. Capacity and willingness to assume responsibility in treatment
6. Past record of constructive interpersonal relationships
7. Past record of ability to derive satisfaction from occupation, religion, sports, lodges and other activities
8. Willingness of family to cooperate

The opposite characteristics were found among those for whom treatment was not successful. When a patient had not at least some of these assets, and if he had not shown some improvement after two months of this treatment, it was unlikely that he would benefit appreciably from a more prolonged period of treatment. There is not evidence enough as yet, however, to be sure of such a categoric generalization.

The most powerful therapeutic force stemmed from the ability of the physician and the clinic to inculcate in the patient faith in himself and the capacity to recognize and deal constructively with his problems. This usually involved a reorientation of attitude and entailed far more than a personal attachment to the physician. Only when he had acquired such faith and confidence was it possible for him to abandon costly inappropriate emergency patterns and deal more directly and constructively with threats and challenges of day to day living.

ABSTRACT OF DISCUSSION

DR. HENRY W. BROSIN, Chicago: I think that the report by Dr. Ripley and Dr. Wolf of 19 per cent basic improvement and 38 per cent symptomatic improvement would agree with the incidence observed in many other clinics; that is a respectable showing. I have every sympathy with their definitive phrasing in itemizing the thirteen methods used and the eight prognostic factors, but hope that in future studies the factors on which these various methods and prognostic criteria are based will be more clearly described. That is the heart of the problem in studying prognosis. This is an excellent study, but we need more definitive work in order to make it useful to the day to day practitioner. Flexibility in treatment is highly desirable, but the more precise definition of the methods used in terms of a specific patient-physician relationship is incumbent on the authors. There is no question in my mind that Dr. Ripley and his skilful associate have a systematic goal, but the actual details need fuller description. The authors point out that the necessity of learning the action patterns and the dynamics rather than the mere description of the patient's difficulties; I would add that we need more familiarity with these patterns. We need to be comfortable with the patient; otherwise, second rate settlements are made, even though these may result in favorable symptomatic improvement. I would like to call attention to the studies of Dr. Thomas French, who pointed out that perhaps one of the best methods of studying the efficacy of individual therapeutic technics—the actual relation between patient and physician—may be studied through the means of the individual unit of work done; a specific problem of the total constellation is carried from the beginning to a point of progress. A series of such units may give much better insight as to the methods, mechanics and basic improvements than a casual, a more superficial, total evaluation. The importance of sound recording for the future of prognostic studies, I think, cannot be overestimated.

DR. ROY R. GRINKER, Chicago: When one talks about psychotherapy it is necessary to understand exactly what one means. One can no longer equate it with some sort of refined common sense approach to a patient's problems, because it now includes procedures which have been highly developed and refined for specific disturbances and it consists of many highly specialized technics. In research in the field of psychotherapy there is no longer concern with statistical reports which state that so many patients were improved, cured or unimproved. These categories even with numbers give little information regarding the real problems of psychotherapy. It can be stated in general that interest lies in knowing what kinds of physicians treat what sorts of disturbances with what specific technics and get what results. By "disturbance" one does not mean a heading or a label in a diagnostic classification, but a specific dynamic formulation obtained from a detailed understanding of the patient's inner and external problems, his vulnerability to failure or success in special life situations with those problems and the methods with which he handles them. The methods with which one treats these disturbances must no longer be classified simply as psychotherapeutic. They must be classified scientifically in detail in terms of the exact procedures of intervention and their specific indications. Helping patients through social service, as one author stated, is not understandable as a system of treating patients. To say that there are thirteen methods which are all used at one time or another in the treatment of a single patient is interesting, but when is one method used? In what dynamic state does one use that one method to solve what problem, and with what results? Millions of dollars are being spent in psychiatric clinics, in psychosomatic clinics, and hundreds of persons are spending a great deal of time in applying therapeutic technics, and yet there is no awareness of the efficacy of any of these therapeutic ventures except in such general terms as have been stated in this paper. It is time to come to terms with specificity in relation to exactly defined entities of psychologic disturbances, in order that this may result in a specialized knowledge that may be retransmitted to the practitioner as "common sense."

DR. H. S. RIPLEY, New York: Perhaps we have covered too large a group of patients and too great a variety of clinical problems to give significant details about individual treatment; however, we have felt that it is important to try to delineate methods of treatment and make some approximation of their value. Our report is based on experience in the Psychosomatic Clinic at the New York Hospital, where the eleven physicians who were carrying out the treatment met in conferences to define the methods we have listed and evaluate their use. The result is a composite picture of their experiences. We need to continue to try to investigate carefully the questions raised by Dr. Brosin and Dr. Grinker. More specific indications for the various categories of treatment should be worked out by those studying psychosomatic problems; however, the complexity of the clinical syndromes and the variability in the personalities of the patients and the therapeutists make it necessary frequently to alter plans of treatment. The need for flexibility has to be kept in mind constantly.

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[3] Wolff, H. G.: Protective Reaction Patterns and Disease, Ann. Int. Med. **27**: 944-969 (Dec.) 1947.

[4] Diethelm, O.: Treatment in Psychiatry, New York, The Macmillan Company, 1936.

[5] Alexander, F., and French, T. M.: Psychoanalytic Therapy, New York, The Ronald Press Company, 1946.

VERIFIED REFRACTION

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This paper describes a refraction routine in which throughout the examination one method of testing is used to check or verify another. In this way most of the common blunders are detected. This practice is particularly valuable for students and for general practitioners who perform a limited amount of refraction. It also has merit for experienced examiners.

At the Board examinations even the well prepared candidates usually show familiarity with only one way of refracting. The method chosen varies, but they use some one technic exclusively. Many of them can describe the theory of other common methods, but have never tried them. Others who have tried them never developed any facility with them. They reverted to their original technic, not because it was best, but because it was familiar.

At first thought this may seem rather commendable than otherwise. We are somewhat conditioned to the idea that if a refractionist can get results by any means, that is as much as can be expected of him. Why then should he not perfect himself in his one system and stick to it? There are several reasons. The first is somewhat theoretical. Surely with their pretensions to superior knowledge, ophthalmologists ought to be more widely informed. A more practical reason is the universal experience that every method, no matter how perfect in theory, fails occasionally. None is infallible. All of them are subject to error, but as they are based on different principles the same mistake does not occur with all. One method will check the accuracy of the others and will supplement them. This ought to be reason enough for all popular methods to be taught to all students. Another reason is that no refractionist is fitted to compare results of different technics until he can perform them dextrously. He does not know which is best.

In over half of all cases all methods of refraction, dials, cross cylinders, cycloplegia and fogging have almost identical results in the hands of experts. It is the other type of case, in which tests disagree, that causes trouble. This is the reason for outlining a refraction routine here which compares the results of different methods and yet is fast because it involves few changes of lenses. It is a good routine for teaching. It is also practical for office use. It is thorough and does not leave undone some test which may later reveal a mistake in the prescription and discredit the examiner.

Records properly begin with the history and visual acuity. The history will reveal certain symptoms which characterize certain anomalies of refraction. The complaints of presbyopic persons constitute an outstanding example. The data on visual acuity will show that different degrees of impairment of distant vision are consistent with different refractive errors, as for instance myopia.

Use of the pinhole is apt to give a rough idea of the possibility of correction.

With this information begins the streamlining of this routine. Preliminary noncycloplegic retinoscopy is the most revealing single test. This gives a preview of the patient's prescription. It is like getting the answer out of the back of the book. It does away with the fumbling called trial and error—mostly error—involved in so-called manifest refraction. Without it several changes of trial frame lenses have to be made before the examiner has any idea whether he is dealing with a hyperope or a myope. In the presence of much astigmatism, he is not even sure of this. I have seen a candidate for the Board take twenty minutes to get information that would have been revealed by a single flash with the retinoscope and then get it wrong. Even if the doctor does not value his time he introduces a source of error every time he wears down his patient. Patients should be relaxed and leisurely.

With the newer self-illuminating retinoscopes, observation through a closed pupil is an easy trick. Fortunately, young persons, whose accommodation is most troublesome, usually have large pupils. The results are by no means to be accepted as absolute, yet in about three quarters of the cases they are fairly reliable, and surprisingly often they give the exact sphere and cylinder of the final prescription.

Since speed is an object, an apparatus is helpful, permitting rapid changes of lenses, like a phoroptometer or Green's refractor. Dry retinoscopy may be accomplished in two ways. One is with the patient looking at distance; the other is with the patient looking at the retinoscope. One method may be used to corroborate the other.

NONCYCLOPLEGIC EXAMINATION

No excuse is needed for the teaching of expert noncycloplegic refraction. Not only is it in skilled hands often more potent than cycloplegia but it also is the best check on the action of cycloplegic drugs, which are sadly erratic. It is the only recourse when mydriasis is contraindicated. Many candidates suffer from the delusion that when cycloplegia fails, nothing else can work. Most of them never have learned how to perform competent "dry" refraction.

ASTIGMATIC DIALS

Leaving in the trial frame, unchanged, the highest plus sphere (or lowest minus sphere) found by dry retinoscopy should automatically provide the fogging sphere required for use with the astigmatic dials. This then is the moment to use this test. The common cause of failure with dials is inadequate fogging. Overfogging is also misleading. As retinoscopy is not entirely trustworthy, in order to determine whether the posterior plane of the conoid is exactly on the retina, a plus sphere may be added, which should increase the blur. The favored method is to expose the clock dial or sunburst of the Lancaster-Regan or the Verhoeff charts. With proper fogging, the most distinct line lies in the axis of the plus cylinder. Replacing the clock with the cross dial, the examiner places one cross line on this axis. Transverse to this is the blurred minus axis. This axis is cleared by concave cylinders, increased until the two crossed lines exactly balance.

There should now be some family resemblance between the result of the dial test and the result of dry retinoscopy. The retinoscopy is so temperamental that a surer check of the dial test is needed. Lancaster,[1] in his original paper in 1915, recommended confirming the axis by rotating the cylinder. This is an early instance of verified refraction. The power may then be tested by alternating equal cylinders before the trial case correction at opposite axes.

Read before the Section on Ophthalmology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

[1] Lancaster, W. B.: Subjective Tests for Astigmatism, Tr. Am. Acad. Ophth., 1915, p. 167.

CROSSED CYLINDERS

Now is a favorable time for the use of cross cylinders as a further check on astigmatism. With the same correction in the trial frame, the examiner tests the axis by flipping the cross cylinder with the handle held in the axis thus found. He then holds the axis of the cross cylinder in this axis and flips again. This tests the power.[2] A modification of the cross cylinder test is the "subtraction test"[3] I described years ago. If any two of these tests agree, the chances favor the result so obtained. The one giving the best visual acuity is usually the correction of choice.

SPHERICAL ERROR

The tests for astigmatism can be performed with only an approximate knowledge of the sphere, but the sphere cannot be determined accurately without the correct cylinder. This routine is now at the point where the cylinder has been determined and is set up in the trial frame. Nothing further is therefore needed to proceed with the fogging test. At present the approved method is to add plus spheres, making the eye artificially myopic. The blur resulting is then reduced by diminishing the plus overcorrection step by step. In response to increased blur by ciliary action, the eye is supposed to relax. Usually that is what happens, though not invariably. Usually greater relaxation takes place if both eyes are seeing and are unfogged simultaneously than when each eye is unfogged with the other covered. This often amounts to as much as 0.75 D. About twenty years ago Burdon-Cooper[4] reported to the English Speaking Congress on a series of cases in which binocular fogging was more potent than atropine. Shortly after this Dorland Smith[5] introduced what he called "cyclodamia." This is a binocular technic. It unfogs from complete blur. This is produced by adding more than + 1.50 to the spheres found by dry retinoscopy combined with the cylinders last determined. The method is distinguished by noting three levels of blur. The levels to be watched for: (1) when binocular vision is 6/60 (20/200)—the eyes are fogged by about + 1.50; (2) when the 6/12 (20/40) line is visible—the fogging is about + 0.50, and (3) when this + 0.50 is removed, the 6/6 (20/20) line should be read. This is not usually the lens affording clearest sight, but is a slightly higher correction. The fog is then almost lifted. This is the time to equalize the correction of the eyes. Usually the vision is equal when the fogging sphere over each eye is the same. If the sight in one eye is not as good as in the other, that eye is probably more heavily fogged. It should be unfogged until the vision is equal in both eyes. Therefore, as 6/6 (20/20) is seldom the patient's best acuity, vision is usually still slightly overcorrected on the plus side, so that the eyes are cleared a little at a time until the best vision is obtained. While Smith's levels are not as exact as this rule implies, they are about as reliable as any refraction tests.

NEAR POINT TEST

Both eyes at this point should have the same near point. This near point should also correspond to the age of the patient. The test is made without alteration of the lenses in the trial frame except that in presbyopia addition of a sphere is required to permit reading. These spheres should be equal in the two eyes and correspond to the age.

There are now three checks on the sphere: (1) the dry retinoscopy, (2) the cyclodamic levels and (3) the near point test. The different observations which should tally, if the examination so far is trustworthy, are:

1. The complaint and history
2. The visual acuity (including pinhole)
3. Preliminary retinoscopy (with variants)
4. Astigmatic dials
5. Cross cylinder test
6. Cyclodamia (three levels)
7. Near point test

If the sequence outlined is followed, it will be seen that the changes in lenses in the frame are reduced to the minimum.

1. The final sphere of the retinoscopy is also that used for the dial test.
2. The lenses left by the dial test are used unchanged for the cross cylinders.
3. The cylinders which result from the tests for astigmatism are not touched again, but carry through the fogging test.
4. For cyclodamia both sphere sides of the phoroptometer are rotated equally and reduced simultaneously. Notation is made of the three levels.
5. The acuity is then equalized.
6. The unfogging is completed.
7 The lenses so found are those used for the near point test.

The advantage of this method of simultaneous binocular fogging should be obvious. It is often three quarters of a diopter more effective than uniocular fogging, and it is the only method, either dry or cycloplegic, in which it is possible to handle both eyes at the same time, eliminating one test.

CYCLOPLEGIA

It is preferable to make routine use of cycloplegia in young persons with active accommodation. To be sure, a few oculists take the position that in the hands of seasoned examiners nothing can be accomplished with cycloplegics which cannot be as well or better effected without them. Even they are rather tolerant of the recommendation that novices should examine with cycloplegics. A recent study[6] found 16 per cent of patients showing 0.75 to 1.00 D. more hyperopia or less myopia with cycloplegia. This means that cycloplegic examination is sometimes more effective, just as at other times dry refraction gives more complete relaxation. Neither is as uniformly reliable as advocates like to believe.

Cycloplegics also tend to allay the tension engendered by emotional stress. This property is as useful as the effect on the accommodation, which is rather fallible. Unless contraindicated, as by a shallow anterior chamber, cycloplegia should be used on the chance that something of importance may be revealed. It is useful if only to confirm the noncycloplegic observation, when dry tests give inconsistent results.

Under cycloplegia, to avoid the customary "static refraction" with hit or miss changes of sphere, and if necessary also of cylinder, aimed at giving 6/6 (20/20) acuity, the routine followed is theoretically similar to that just outlined for dry refraction, cylinder first and then sphere, with best vision the criterion: (1) retinoscopy, (2) cycloplegic acceptance of cylinder with dial tests and cross cylinders, (3) choice of sphere at trial case and (4) near point test for residual accommodation.

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[2] Crisp, W. H.: A Plea for Use of Cross Cylinder, Tr. Am. Acad Ophth., 1922, p. 178.

[3] Beach, S. J.: Correction of Low Astigmia, Tr. Am. Ophth. Soc. **40**: 63, 1942.

[4] Burdon-Cooper, J.: The Behavior of the Crystalline Lens System in Artificial Cycloplegia, Tr. Ophth. Soc. U. Kingdom **45**: 386, 1925.

[5] Smith, D.: Refraction Under Cyclodamia, Am. J. Ophth. **9**: 896, 1926.

[6] Bannon, R. E.: Use of Cycloplegics in Refraction, Quart. Rev. Ophth. 4: 144 (June) 1948.

These tests should confirm the precycloplegic tests. They should also be consistent with one another. If the cycloplegic tests for sphere and cylinder confirm the dry refraction, then the duplication is usually unnecessary.

Usually the cycloplegic tests will confirm the precycloplegic observations. Results can then be accepted for prescription of lenses. Because these methods of examination so often produce identical results, most ophthalmologists tend to omit one or the other and thereby lose the chance to check their results.

POSTCYCLOPLEGIC EXAMINATION

The use of cycloplegics may uncover some blunders in the dry tests. When they differ from the precycloplegic observations, a postcycloplegic examination is necessary. The cycloplegic tests alone cannot be relied on for two reasons. The dilated pupil exaggerates the aberrations of the eye. The cycloplegia is itself uncertain. Vision with the dilated pupil may not be quite as accurate. The postcycloplegic tests follow the precycloplegic routine. Contrary to custom, it is often advantageous to make the postcycloplegic examination before the cycloplegia is entirely worn off, so that asthenopic influences are in abeyance.

SUMMARY AND CONCLUSION

This paper is inspired by the limited knowledge of refraction exhibited by candidates for the Board examination. Even the candidates who obtain satisfactory results at the practical examinations show training confined to only one of the standard methods. Young assistants can usually operate on cataracts better than they can fit patients with glasses.

The paper presents a sequence which permits all tests to be checked by other technics, based on different principles. By following the order indicated few changes of lenses are needed, so that the routine is fast as well as accurate. It is useful for teaching and for occasional fitting of glasses by general practitioners. It is also well adapted to routine office refraction.

For clearness the details of the tests available in treatises on refraction have been omitted. So, also, are variants, such as choice of cycloplegics, refraction with plus cylinders instead of minus and cylinder retinoscopy, which do not materially affect the use of the routine described. In general, ophthalmologists use some approved method of refraction and trust to luck that it will give correct results. The results should be verified to enable one to be as certain as possible.

ABSTRACT OF DISCUSSION

Dr. M. Hayward Post Jr., St. Louis: Today the problem of the relation of the medical profession to the art of refraction is one that is uppermost in the minds of all thinking ophthalmologists. It is only through complete understanding of the physiologic and pathologic processes of the complex organ of sight, and its close relationship to the body as a whole, that this examination can be properly carried out. It is only through our ability to give the highest grade of service, thereby achieving the finest results, that we may hope to retain the confidence of the public. Dr. Beach has pointed out the simple obvious facts, but I regret to say that the lesson to be learned therefrom, in my experience in conducting the examination of students of all ages, has, as a rule, not been put into practice. This is all too often true, not only of the young and inexperienced, but even more so of the older and busier practitioner. The fundamental difficulty lies in the graduate training in the eye departments of the medical schools. Here great stress is laid, as it should be, on retinoscopy under a cycloplegic. The mentality, and frequently a language difficulty, often make this type of examination a necessity in clinical work. But in private practice, where the grade of intelligence is higher, and the time of the average patient more valuable, such a procedure in all cases is neither practicable nor desirable. Here the art of "dry refraction" becomes of vastly greater importance, and many young ophthalmologists, fresh from clinical training, are at a loss as to the proper procedures. One aspect of this tendency toward onesidedness may be gleaned from the setup in many of the largest clinics, where the use of the astigmatic dial is, apparently, a lost art. This is harmful. At least as a check-up on other methods of refraction it is of the greatest value, and, indeed, in the hands of experts gives a rapid and exact method of estimating astigmatism, especially when combined with the use of the crossed cylinder. The older ophthalmologist often falls into a rut and, from lack of time and greater interest in the more spectacular aspects of surgery and pathology, fails to "verify" his refraction. The result is that the majority of older ophthalmologists are notably poor refractionists. The teaching of refraction should not be left solely in the hands of the residents and younger members of the staff, but it should be carefully and conscientiously supervised and controlled by the more experienced of the faculty.

Dr. Hugo L. Bair, Rochester, Minn.: Refraction has two correlated aspects: one is the precise optical examination of the eyes and the other is to provide comfortable vision which is satisfactory for the patient's requirements. Dr. Beach's excellent paper stresses the first aspect. He includes the history as a part of the procedure. This is extremely important with regard to the second aspect of the refraction. The examiner should decide, if possible, whether or not the chief complaint is likely to be related to use of the eyes and whether or not any refractive error or imbalance of the ocular muscles could be the basis for it. This decision is significant in the determination of the final prescription. It is also important to know what vocational and avocational demands are made on the patient's eyes. Dr. Beach mentions retinoscopy as the preliminary step in determination of the refractive error. Too often, in the teaching of refraction, either insufficient emphasis or wrong emphasis has been placed on retinoscopy. It can be more than simply a rough guide to the degree and type of refractive error. In Dr. Beach's system of refraction retinoscopy assumes a place along with other procedures. The findings on retinoscopy should be checked by, and should also be a check on, the procedures. It is as valuable in cyclodynamic as in cycloplegic refraction. In case of a normal pupil and no cycloplegia, retinoscopy should be done by fogging; the more hypermetropic meridian should be slightly overcorrected on the plus side with a sphere. The sphere is left in place in the trial frame and a minus cylinder then is used to determine the astigmatism. If the combination thus found is left in place, it can be used as an immediate basis for the subjective refraction. An important principle that is not sufficiently emphasized in the teaching of refraction is the production of rapid contrasts to determine the best correction. Use of the cross cylinder brings this out very well in the determination of astigmatism, but the same principle is applicable to the determination of the spherical correction for the single eye as well as in the comparison of the corrections in the two eyes. In determination of the spherical correction for the single eye, a small plus and an equally small minus sphere are quickly interchanged in front of the eye and the correction in the trial frame is varied until the same degree of blur is produced with each of the check lenses. Rapid interchange does not allow time for the small minus sphere to be overcome by accommodation.

Dr. Joseph I. Pascal, New York: Dr. Beach mentioned the use of the cross cylinder in connection with the line charts. It cannot be emphasized too strongly that these two methods of examination differ radically in the method of application. It has been shown, and can be shown by the study of the retinal images and also mathematically, that a cross cylinder works best only when the eye is not fogged, that is, when the eye is in a condition which may be called meridional balance. In this condition the astigmatism has been changed to mixed astigmatism, whereas the line charts work best only when the eye is fogged, slightly fogged or half fogged. With reference to refraction in general, Dr. Beach has well shown that there is need of having more than one method at one's command, but there is one point in this connection which needs to be mentioned, that is, different methods of examination will frequently give slightly different results, occasionally decidedly different results. The most plausible explanation for this observation is that the different zones in the pupil generally have somewhat different refractive errors; for example, with a 4 to 5 mm. pupil, if one isolates a 2 mm. zone in the lower part of the pupil, one often finds a different refractive condition from what one would find in a 2 mm. zone situated at some other part of the pupil. When one examines the eye with the pupil exposed as a whole, the result is really an average of different refractive conditions of the different pupillary zones. When these different zones are decidedly different in their refractive errors, the same average can be obtained by a combination of different elements, so that there may be different observations, two or three of which will give practically the same visual acuity. In such cases, which are rather puzzling, I would like to ask Dr. Beach what he suggests doing. I myself have always suggested trying the different prescriptions at the near point to see which gives the best results there, because, as the pupil contracts, there are fewer zones which have to be averaged, and that correction which will best suit the eye for both far and near will be obtained. Incidentally, an understanding of this point of variability in the pupillary zones is valuable in studying and evaluating the relative validity of different methods of refraction.

Dr. I. S. Tassman, Philadelphia: Dr. Beach has presented a thorough procedure for refraction. However, nothing has been said about refraction for children. It ought to be emphasized that cycloplegic refraction with atropine should be employed with children up to the age of at least 12 years. The preliminary examination should be carried out as Dr. Beach described, then followed by cycloplegic examination and also a postcycloplegic examination. All of the methods and tests that are mentioned and described can be applied in every case, as Dr. Beach pointed out, with one checking the other. The power of discrimination ot the patient should also be evaluated by the examiner. It is important that one recognize the visual as well as the mental alertness of the patient is important, and that should be taken into consideration in determining the best result obtained in that particular patient.

Dr. S. Judd Beach: Cyclodamia is the name that Dorland Smith gave to a binocular form of descending fogging. The vision is deeply fogged by high convex lenses. Both eyes are exposed at the same time. Three levels of visual acuity are noted as the fog is gradually reduced. At the top level the 20/200 line becomes visible binocularly. This indicates fogging by a + 1.50 sphere in both eyes; at the second level the 20/40 line appears, indicating fogging by + 0.50 spheres; at the lowest level, the 20/20 line is seen. In obtaining the cycloplegic acceptance, textbooks tell one to change spheres, a little plus or a little minus, until 20/20 vision is reached. If in this way 20/20 vision is not obtained, then cylinders should be tried. On the contrary, I feel that the routine I described for noncycloplegic refraction is also best under cycloplegia. First the cylinder and then the sphere should be determined. I was not prepared to have so many persons agree with me. What Dr. Bair added to the discussion about the near point test is true, but, as Dr. Post said, that does not make it any the less desirable to measure the near point in each case. Dr. Pascal raised a significant question concerning the variation in refraction in different areas of the cornea. There is some question as to whether, with the enlarged pupil, the patient averages these different refractive errors or whether, as Dr. Crisp and Dr. Lancaster some time ago suggested, the patient chooses the area he prefers or with which he sees best. I cannot go into that, because it would take a long discussion to explain the optical principles involved, but there are two points of view with regard to that. Of course, Dr. Tassman's contribution about the examination of children is important.

Clinical Notes, Suggestions and New Instruments

"DIASONE" THERAPY OF ACTINOMYCOSIS OF THE JAW

Report of a Case

HARRY L. ARNOLD Jr., M.D.
and
E. R. AUSTIN, M.D.
Honolulu, Territory of Hawaii

In March of this year (1948) Dr. Fernando Latapí of Mexico City demonstrated to one of us (H. L. A.) a case of actinomycosis in which an extensive cutaneous granuloma was healing rapidly, apparently as a result of the oral administration of disodium formaldehyde sulfoxylate diaminodiphenylsulfone ("diasone," Abbott). A similar response had been observed by him in two previously treated patients with this disease. The dose employed was that customarily used in the treatment of leprosy in Mexico: 15 grains (1 Gm.) daily for the first week, 20 grains (1.3 Gm.) daily for the second week and 25 grains (1.6 Gm.) daily thereafter. This is a much larger initial dose than that used in Hawaii (5 grains [0.3 Gm.] a day, three days a week, raised in 5 grain [0.3 Gm.] increments, on those days only, till 25 grains [1.3 Gm.] is reached, and then the same initial dose and the same increments on the alternate days). It is three times as large as the initial dose recommended by the Fifth International (Havana) Leprosy Congress in April of this year. Extensive experience in Guadalajara and in Mexico City indicates, however, that it is not dangerously high.

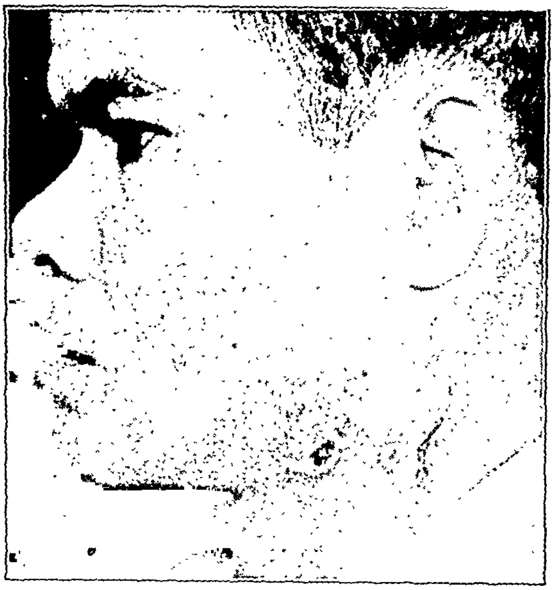

Fig. 1.—Lesion on July 3, before treatment.

The purpose of this report is to bring these cases, and an additional case of our own, to the attention of American physicians.

REPORT OF A CASE

E. D., a 40 year old Filipino milker of cows, was first seen by one of us (E. R. A.) on July 9, 1948, because of swelling of the soft tissues immediately behind the left ramus of the jaw (fig. 1) following extraction of a tooth about two months previously. Treatment by another physician, consisting of twelve intramuscular injections of penicillin, had had no effect, the mass having increased steadily in size. The patient's temperature was 99.6 F. Roentgenograms showed irregular decalcification of the left side of the mandible; the bony cortex was intact, however, and the process was interpreted by the roentgenologist as secondary to the soft tissue mass. Kolmer, Wassermann and Eagle reactions of the blood were negative.

From The Clinic, Honolulu.

A biopsy of the mass revealed only vascular granulation tissue with suppuration. A second biopsy specimen, from inside the mouth, showed a similar process, in which some amorphous material was found which suggested a fungus colony. Further sections, however, failed to confirm this observation and showed changes which were interpreted as indicative of a mixed tumor of the parotid, with nonspecific infection in the region of the extraction of the tooth.

The patient received penicillin in oil and wax intramuscularly, 300,000 units on June 14, 150,000 units on June 22 and 300,000 units on June 25 and 29 and on July 2. On July 3 the lesion had begun to drain thick pus from several orifices, and the patient was hospitalized and given 600,000 units of penicillin in oil and wax intramuscularly daily until July 9, at which time slight improvement had occurred, all of the external discharge of pus having stopped. On July 12 another biopsy specimen from inside the mouth revealed only nonspecific pyogenic vascular granulation tissue.

On July 12, two fluctuant areas on the surface of the mass, which was at this time approximately 8 cm. in diameter, were deeply incised, and the evacuated pus collected in a Petri dish and examined. Several yellow granules were observed, which proved microscopically to be colonies of Actinomyces.

Weekly Blood Cell Counts and Urinary Albumin Determinations During Administration of "Diasone"

Date	Daily "Diasone" Dosage During Previous Week, Gm.	Red Blood Cell Count (Millions/Mm.³)	Hemoglobin Gm./100 Cc.	Hemoglobin Percentage	White Blood Cell Count (Thousands/Mm.³)	Polymorphonuclear Cells*	Lymphocytes*	Monocytes*	Eosinophils*	Albumin in Urine
7/12/48	0	4.3	14.0	89.5	13.5	61	25	2	12	Trace
7/20/48	1.0	3.7	13.6	87.0	11.8	59	20	5	16	Trace
7/27/48	1.3	4.7	15.0	96.0	11.7	71	25	0	4	1 plus
8/3/48	1.6	5.0	15.6	100.0	13.7	61	24	0	15	1 plus
8/10/48	1.6	4.8	16.0	103.0	12.0	75	25	0	5	Trace

* Percentage of total.

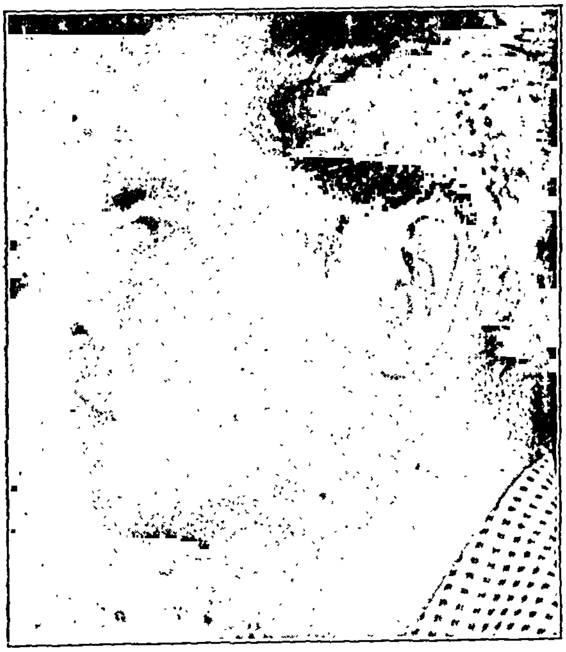

Fig. 2.—Lesion on August 10, at the end of the fourth week of "diasone" therapy.

"Diasone" therapy was begun immediately in a dose of 15 grains (1 Gm.) daily, and the dose was increased each week by 5 grains (0.3 Gm.) daily No intolerance was reported by the patient. The blood cell counts are shown in the accompanying table. At the end of the first week, both the incisions had healed completely; at the end of the second week, the lesion was still very firm, but the surrounding soft tissue swelling was noticeably diminished; at the end of the third week, the lesion was reduced to about two thirds of its original size and the skin was freely movable over it; at the end of the fourth week (fig. 2) there was only a residual fibrotic nodule, less than one-sixth the size of the original mass, with normal overlying skin except for a few scars. The red cell count had risen to nearly 5,000,000 and the hemoglobin to 16 Gm.

COMMENT

The response to penicillin in the hospital is in line with previous reports of the effectiveness of this drug in actinomycosis, and suggests that—had the diagnosis been known at that time, so that more confidence could have been reposed in this form of treatment and the dose increased or the schedule prolonged—a cure might have been obtained in this way. However, the decided flare-up of the process after the penicillin therapy was stopped, seems to exclude any possibility that this drug participated in the subsequent improvement of the lesion. This improvement began so promptly and progressed so rapidly under "diasone" therapy that it seems reasonable to attribute it to the latter drug.

The initial drop in the red blood cell count may have been due to the hemolytic effect which "diasone" is known to have in certain patients. The prompt return of the cell count to normal without adjuvant therapy of any sort indicates that this effect may be a transitory one.

CONCLUSIONS

Biopsy may be a less satisfactory means of diagnosis in actinomycosis, probably because it is often of necessity relatively superficial, than examination of the purulent discharge for "sulfur granules."

"Diasone" seems worthy of further trial in the treatment of actinomycosis.

881 South Hotel Street.

SUBACUTE BACTERIAL ENDOCARDITIS

Report of a Case of Reinfection

MARVIN J. ROSENBURG, M.D.
Los Angeles

The treatment of subacute bacterial endocarditis has been divided historically by most authors into three distinct periods of time. The first encompasses the period before the use of sulfonamide drugs, when it was estimated that the incidence of spontaneous recovery varied between 0 and 1 per cent. The second phase began with the use of sulfonamide drugs, either with or without fever therapy. Lichtman,[1] in an analysis of 704 cases falling in this group, computed the incidence of recovery to vary between 4 and 6 per cent. This was felt to represent a significant percentage increase. Since the advent of penicillin therapy, in the third period, a considerable number of authors have discussed the principles of treatment, the dosages used and the results obtained with penicillin. The percentage of cured patients has increased until it now is estimated to lie between 60 and 80 per cent. Some of the cases have been followed up for as long as thirty-five months after treatment

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Dr. Morley J. Kert, Junior Consultant, Internal Medicine, Wadsworth General Hospital, gave helpful suggestions and criticisms during the preparation of this paper.

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[1] Lichtman, S. S.: Treatment of Subacute Bacterial Endocarditis: Current Results, Ann. Int. Med. 19: 787 (Nov.) 1943.

was concluded.[2] Hunter cited 41 cases of clinical cure, some of which were followed-up for eighteen months after treatment,[3] while Priest, Smith and McGee [4] stated that thirty-five months had elapsed since the treatment in some of their cases.

The purpose of this paper is to report a case of subacute bacterial endocarditis which recurred twenty months after completion of the first course of therapy. The apparent adequacy of the primary treatment, together with the long interval during which the patient was symptom free, make it seem that reinfection, rather than relapse had occurred.

REPORT OF A CASE

First Admission.—A 31 year old white salesman was admitted April 8, 1946, to a hospital, complaining of fatigue and chronic low grade fever of two months' duration. Approximately two months before entry he had had a mild infection of the upper part of the respiratory tract characterized by persistent low grade fever, fatigue, loss of energy and transitory arthralgia of the knees, elbows and back. He took sulfadiazine tablets for three days without relief. Immediately prior to entry, the right calf became painful, tender and swollen and two small red painful nodules appeared on his fingers. Physical examination revealed a well nourished normally developed white man who was not acutely ill. There was a reddish nodule on the palmar surface of the right hand. He had a ticktack rhythm of the heart, a split mitral first sound, but no murmurs were heard. The right calf was exquisitely tender and was ¾ inch (2 cm.) larger in circumference than the left.

Laboratory examination revealed mild anemia, leukocytosis and an elevated sedimentation rate. Two blood cultures were positive for Streptococcus viridans. While the patient was in the hospital cutaneous lesions suggestive of erythema nodosum developed, with petechial lesions of the uvula and electrocardiographic changes suggestive of rheumatic fever. Three weeks after entry an aortic systolic and diastolic murmur appeared, together with a widened pulse pressure. A diagnosis of subacute bacterial endocarditis, presumably on a bicuspid aortic valve, was made. The patient was treated with 800,000 units of penicillin daily for six weeks. After three negative monthly blood cultures and an asymptomatic follow-up period he was discharged as cured.

Second Admission.—The patient remained well until he entered the reporting institution on Feb. 11, 1948, because of a three week history of low back pain. This was deep to the right posterior iliac aspect of the spine. His temperature was noted to be 101 F. rectally. Before entry, while under "pentothal sodium" (sodium 5-ethyl-5-[1-methylbutyl] thiobarbiturate) anesthesia he had received osteopathic manipulation of his back. Exacerbation of his low back pain had resulted. He was also given penicillin therapy during this period, and of interest is the fact that his temperature returned to normal, only to rise when the penicillin therapy was discontinued.

On examination he was seen to be well developed and nourished, but immobilized in bed by his severe low back pain. Positive physical observations were of a slight left-sided cardiac enlargement, a forceful apical beat, an aortic systolic grade 1 murmur, which was transmitted to the neck, and a grade 3 diastolic aortic murmur. This was transmitted to the apex. His blood pressure was 150 systolic and 70 diastolic. The orthopedic consultant observed no local pathologic condition in the back, but did feel that any torsion of the spine aggravated the pain.

Laboratory examination revealed 12,660 white blood cells, with a normal differential count, and 4,100,000 red blood cells, with 86 per cent hemoglobin. The sedimentation rate was 28 mm. in sixty minutes. Four successive blood cultures were positive for S. viridans. The urine, Wassermann reaction of the blood and spinal fluid were normal. Roentgenograms of the back revealed narrowing of the lumbosacral segment with apparent calcification of the nucleus pulposus. There were minimal arthritic changes of the apophyseal joints. There was minimal enlargement of the left ventricular outflow tract shown in roentgenologic examination. An apical abscess of the lower right first molar was found, and culture of the abscess fluid after extraction yielded S. viridans.

The organism isolated by blood culture proved to be sensitive to less than 0.1 unit of penicillin per cubic centimeter by in vitro tests. Patient was given 6,000,000 units of penicillin daily, with return of the elevated temperature to normal within three days. The penicillin was given by intramuscular injection each two hours. After twelve days the dosage was decreased to 3,000,000 units daily. This was continued for twenty days, with a serum penicillin level of 5 units per hundred cubic centimeters. The total penicillin administered was 132,000,000 units in thirty-five days. The blood cultures, temperature and leukocyte count returned to normal shortly after specific therapy was begun and continued at normal levels for the succeeding five months. The sedimentation rate, at the time of writing, had been persistently elevated.

COMMENT

This case presents certain points of particular interest. I feel that the presence of an apical root abscess yielding the same organism as that seen on blood culture indicates the origin of the present valvular infection. This correlates with the work of Okell and Elliot,[5] who observed that 61 per cent of 84 patients experienced transient bacteremia following tooth extraction under general anesthesia. If pronounced gum disease was present, the figure rose to 75 per cent. Of interest is the fact that 12 of the 100 patients cited by these authors had bacteremia before any operative procedure had been done, indicating that transient bacteremia may occur at any time. Rhoads [6] obtained similar data by taking blood cultures at ten minute, three hour and twenty-four hour intervals after tooth extraction. Positive cultures were obtained in 8 of 25 cases. He also cited cases of patients with pronounced gingivitis who had positive blood cultures following the chewing of mint candies.[6] Correlation of this and other data has led most investigators to list the teeth and gums as the primary focus of infection in the majority of cases of bacterial endocarditis. This case is no exception.

It is not clearly established whether a previously inadequate course of penicillin therapy will alter the penicillin resistance of an organism to further treatment. The decided sensitivity of the organism in the aforementioned case raises the question whether this indicates a reinfection or a relapse. Several authors, among them Bloomfield and Halpern [7] and Flippen and his co-workers,[8] expressed the belief that inadequate courses of therapy, particularly if carried out for long periods of time, tend to increase the resistance of the organism to penicillin. Particularly would this be true if the second course were not given promptly after the relapse developed. The possibility that my patient might have a recurrent infection, therefore, further complicated the determination of how much penicillin to be given. Because of technical difficulties I was not able to secure an immediate report of the penicillin sensitivity of the organism. Consequently it was decided to begin with 6,000,000 units of penicillin per day. This was decreased when the penicillin sensitivity was obtained. The pronounced sensitivity displayed in this case, however, would seem to be corroborative evidence in favor of a reinfection.

Before determining that reinfection has occurred, one must first define what constitutes a cure. Goerner, Geiger and Blake [9] recognized this problem when they stated that spontaneous remissions might occur which may last for weeks.

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[2] (*a*) Flippin, H. F.; Maycock, R. L. Murphy, F. D., and Wolferth, C. C.: Penicillin in the Treatment of Subacute Bacterial Endocarditis, J. A. M. A. **129:** 841 (Nov. 24) 1945. (*b*) Massel, B. F., and Jones, T. D.: Subacute Bacterial Endocarditis, New England J. Med. **235:** 605 (Oct. 24) 1945. (*c*) Thill, C. J., and Meyer, O. O.: Experience with Penicillin and Dicoumarol in Treatment of Subacute Bacterial Endocarditis, Am. J. M. Sc. **213:** 300 (March) 1947.

[3] Hunter, T. H.: Treatment of Subacute Bacterial Endocarditis, Mod. Con. Cardiovas. Dis. **15:** 8, 1946.

[4] Priest, W. S.; Smith, J. M., and McGee, C. J.: Penicillin Therapy of Subacute Bacterial Endocarditis, Arch. Int. Med. **79:** 333 (March) 1947.

[5] Okell, C. C., and Elliot, S.D.: Bacteremia and Oral Sepsis with Special Reference to Etiology of Subacute Bacterial Endocarditis, Lancet **2:** 869 (Oct. 19) 1935.

[6] Rhoads, P. S.: Subacute Bacterial Endocarditis: Etiological Considerations and Prophylaxis, M. Clin. North America **32:** 176 (Jan.) 1948.

[7] Bloomfield, A. L., and Halpern, R. M.: Penicillin in Subacute Bacterial Endocarditis, J. A. M. A. **129:** 1135 (Dec. 22) 1945.

[8] Flippin, H. F.; Maycock, R. L., and White, W. L.: The Treatment of Subacute Bacterial Endocarditis, M. Clin. North America **30:** 1233 (Nov.) 1946.

[9] Goerner, J. R.; Geiger, A. J., and Blake, F. G.: Treatment of Subacute Bacterial Endocarditis with Penicillin: Report of Cases Treated Without Anticoagulant Agents, Ann. Int. Med. **23:** 491, 1945.

Permanent disappearance of symptoms was rarely reported without specific treatment. A large number of patients have been reported to have become asymptomatic after being treated with small doses of penicillin, only to display a recurrence of symptoms when the penicillin therapy was discontinued. Because of this, it was felt that time was the only criterion of a permanent cure. Numerous authors have presented the same point of view.[10] Hunter stated that if relapses occur, they almost always develop in the first two weeks after therapy is stopped.[3] To avoid this, he advocated intensive therapy. Christie reported 147 patients treated under the English clinical trials committee and stated that when relapses occur they do so within thirty days after treatment and are extremely rare after fifty days. This principle was used to evaluate the efficacy of varied forms of treatment.[11] If their patients remained asymptomatic for fifty days after treatment, they were considered cured. There was relapse in only 1 of their cases after this time, with symptoms recurring sixty days after treatment. This was considered to be a reinfection, inasmuch as a different organism was obtained on relapse than had been seen on initial infection. Gefter and his co-workers [12] gave a slightly more conservative definition. They expressed the belief that twelve months should be considered the critical period. If a patient survives this period without a further development of symptoms, he is considered cured. Prior to the use of penicillin there were extremely few reports of patients living this long in remission. Therefore, if there is clinical or bacteriologic evidence of subacute bacterial endocarditis after this time, it is considered that the patient has a reinfection.

In view of the multitude of reports of clinical and bacteriologic cures of bacterial endocarditis which have appeared in the last few years, there are relatively few reported reinfections. Geiger treated 1 patient in whom the disease occurred six months after initial treatment,[13] and Paul and his co-workers [14] reported a case which they felt recurred seventeen months after the initial treatment course. Christie reported the aforementioned case. Cannady [15] treated a patient with reinfection occurring twelve months after the first attack. Thill and Meyer reported a patient who had a reinfection one year after treatment. He had been well and working until after a dental extraction clinical and bacteriologic evidence of reinfection was observed.[2c]

It is expected that cases of this type will become more frequent in the future. With the occurrence of an increasing number of cures of a previously uniformly fatal disease, the opportunity for reinfection will be heightened. Whether a valve additionally scarred following the eradication of a mycotic vegetation will be more susceptible to further infection than one scarred merely as a result of rheumatic fever or a congenital lesion is not at present known. It is felt, however, that the case presented herein is an illustration of a patient who was cured of his disease by means of penicillin and who experienced a reinfection at a later date.

It has been recommended that follow-up studies of all cured patients be done to forestall this possibility. Priest, Smith and McGee utilized weekly examinations of the white blood cells, sedimentation rate and blood cultures for the first month after treatment, semimonthly checks for the next six months and monthly examinations thereafter. Others have expressed the belief that the temperature and sedimentation rate are the most important observations. Jones and Tichy [16] reviewed the literature and found no active cases of endocarditis without an elevation of the temperature and sedimentation rate.

There are many variations of the aforementioned procedures which can be used. The primary point of importance would seem to be the use of one type of follow-up period to insure freedom from reinfection. This would be of most importance the first few months after treatment is concluded, but should also be done periodically thereafter.

SUMMARY AND CONCLUSIONS

A case of subacute bacterial endocarditis is presented which is believed to be an example of reinfection. Salient features of the case involving the portal of entry, sensitivity of the organism and response to treatment are outlined. A short discussion of the concept of reinfection in subacute bacterial endocarditis is presented. It is felt that one year should be selected as the dividing line between relapse and reinfection. Most cases will show a recurrence of symptoms in the first or second month after treatment is ended. It is believed that periodic follow-up studies should be done on all patients cured of subacute bacterial endocarditis.

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[10] Scheifley, C. H., and Hagedorn, E. B.: Treatment of Subacute Bacterial Endocarditis: A Report of Forty Cases, Proc. Staff Meet., Mayo Clin. **22:** 527 (Nov. 12) 1947. Clark, W. H.; Bryner, S., and Rantz, L. A.: Penicillin Resistant Non-Hemolytic Streptococcal Subacute Bacterial Endocarditis, Am. J. Med. **4:** 671 (May) 1948.

[11] Christie, R. V.: Penicillin in Subacute Bacterial Endocarditis, Brit. M. J. **1:** 381 (March 16) 1946.

[12] Gefter, W. I.; Maher, I. E., and Dworin, M.: Treatment of Subacute Bacterial Endocarditis, Clinics **5:** 58 (June) 1946.

[13] Geiger, A. J.: Experiences in the Treatment of Subacute Bacterial Endocarditis with Penicillin, Am. Heart J. **33:** 736 (May) 1947.

[14] Paul, O.; Bland, E. F., and White, P. D.: Bacterial Endocarditis, New England J. Med. **237:** 349 (Sept. 4) 1947.

[15] Cannady, E. W.: The Successful Use of Penicillin in the Treatment of Subacute Bacterial Endocarditis, Illinois M. J. **93:** 94 (Feb.) 1948.

[16] Jones, S. H., and Tichy, F. E.: Bacterial Endocarditis Treated with Penicillin, New England J. Med. **236:** 729 (May 15) 1947.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report on the recommendation of its Consultants on Electroencephalography. The consultants are: Drs. Percival Bailey, Edward J. Baldes, Hallowell Davis and Frederic A. Gibbs.

HOWARD A. CARTER, *Secretary.*

TENTATIVE MINIMUM REQUIREMENTS FOR ACCEPTABLE DIRECT READING ELECTROENCEPHALOGRAPHS

The following requirements are based on recommendations drawn up by the American Electroencephalographic Society (1947). The recommendations of the Society were intended as recommendations to manufacturers, not as minimum requirements. In the following requirements it should be noted that certain items are specified herewith as minimum requirements for Council acceptance; others are stated as the recommendations of the American Electroencephalographic Society for desirable additional features for higher standards of performance.

A. NUMBER OF CHANNELS

Portable equipment may include a minimum of two channels. Clinical laboratory equipment shall include not less than four channels. For research equipment an even larger number of channels is usually desirable.

B. ELECTRICAL AND MECHANICAL SPECIFICATIONS FOR EACH RECORDING CHANNEL

1. *Linearity of Response.*—The deflection appearing in the record shall be directly proportional to the voltage applied to the input of the apparatus to within 10 per cent (or ½ mm., whichever is larger) up to an amplitude of linear deflection not less than 1 cm. in each direction from the base line (i. e., 2 cm. over all).

2. *Amplification.*—(*a*) When the controls are set for maximum amplification an input voltage change of 5 microvolts ($5\mu v$) shall give a deflection of not less than 2 mm. This requirement in conjunction with section B1 implies a sensitivity at the highest gain setting of not less than 2.5 μv per millimeter.

(*b*) The ratio between the maximum deflection proportional to the input voltage and the minimum visible deflection shall be not less than 40 to 1. For example, if a 1 cm. deflection is obtained from 160 microvolts input the deflection for 4 microvolts input must be visible at the same gain setting.

(*c*) The total attenuation available shall be not less than 1,000 to 1. The American Electroencephalographic Society recommends that there should be two controls of amplification. The principal control should have increasing steps of not more than 100 per cent per step and should provide an over-all attenuation of at least 25 to 1. The second gain control should provide continuous adjustment for equalization of the gain in the various channels.

3. *Frequency Response.*—(*a*) The over-all frequency response of the system shall be such that between 1 and 60 cycles per second the deflections at all frequencies shall be within 10 per cent of the average of the maximum and the minimum deflections within this range.

(*b*) Over-all time constant (R. C.), without low frequency cut-off filters, should not be less than 0.2 second. This implies a square wave response which declines to 0.37 of its peak value in 0.2 second.

(*c*) The American Electroencephalographic Society recommends the provision of both low frequency cutoff filters and high frequency cutoff filters.

(*d*) The American Electroencephalographic Society recommends that there should be no significant distorting resonance in the system outside of the frequency range of 1 to 60 cycles per second.

4. *Coupling of Controls.*—The American Electroencephalographic Society recommends that the operation of any one control should not alter the effective setting of any other control by more than 15 per cent.

5. *Noise Level.*—With the input short-circuited and with the controls set to meet the requirement of section 3 (*a*) no deflections greater than that produced by an input voltage of 2 micovolts (peak to peak) shall appear oftener than once a second on the average.

6. *Effect of Line Voltage Fluctuations.*—A line voltage fluctuation amounting to 5 per cent above or below the voltage recommended by the manufacturer as normal operating voltage shall not produce a deflection in the record greater than that produced by an input voltage of 2 microvolts (peak to peak).

7. *Discrimination.*—"Discrimination" here refers to the ratio of a potential difference applied between ground and the input terminals connected together (for a given deflection) to the potential difference applied between the input terminals for the same deflection. The discrimination of the instrument shall be at least 1,000 to 1. The American Electroencephalographic Society recommends even more discrimination, particularly in portable apparatus.

8. *Limitation of Arc Distortion.*—The maximum arc distortion shall be not more than that produced by a pen 10 cm. long.

C. Relationships Between Channels

1. *Coupling Between Channels.*—When the controls in all channels are set for equal sensitivity a potential difference applied to the input of one channel only shall not produce a deflection in any other channel greater than 1 per cent of that in the channel to which the potential difference is applied.

2. *Similarity of Channels.*—The American Electroencephalographic Society recommends that the several channels shall be as nearly identical as possible and suggests the following practical criterion: When all principal gain and filter controls are set to the same positions and the channels are matched for sensitivity by setting the appropriate fine controls and identical input signals are applied simultaneously to the inputs, then all of the channels should give records that are superimposable within 10 per cent or ½ mm., whichever is larger.

D. Recorder

1. *Recording Surface Travel.*—The recording surface shall travel from the operator's right to his left and shall be visible for a distance of not less than 60 cm. to the left of the recording line.

2. *Recording Surface Speed.*—The standard speed for recording shall be 30 mm. per second ±2 per cent. The American Electroencephalographic Society recommends that one faster and one slower speed (each at an integral ratio to the standard) be provided and that these speeds be selectable while the recorder is in operation.

3. *Recording Line.*—The width of the recorded line shall be not more than ½ mm. in all directions of travel.

4. *Spacing and Registration of Recording Lines.*—(*a*) At zero deflection all the recorder writing points shall lie within ±0.5 mm. of a line perpendicular to the time axis of the record in the plane of the record.

(*b*) The spacing between writing points at zero deflection shall be not less than the maximum peak to peak recordable deflection.

(*c*) The American Electroencephalographic Society recommends that the maximum spacing of the recorders shall be not more than 35 mm. It also recommends that unless satisfactory accuracy is guaranteed by the manufacturer each recorder should be adjustable (to the accuracy specified above) in respect to (1) registration in line with the other recorders, (2) lateral spacing between recorders and (3) pressure on the recording surface (accuracy not specified).

E. Construction and General Requirements

1. *Selector Switches.*—The American Electroencephalographic Society recommends that selector switches with at least 16 contacts should be provided at the input of each channel.

2. *Shielding and Grounding.*—The input leads from an appropriate distributor panel to the input selector switches shall be shielded and the shield(s) shall be securely attached to the common ground. Leads for the AC power supply shall also be shielded and the shield securely attached to the common ground.

3. *Electrode Connectors.*—The American Electroencephalographic Society recommends that input leads to connect the electrodes to the distributor panel should be provided and should be fitted with appropriate clips and plugs to suit individual requirements.

4. *Calibrator.*—(*a*) A calibrating circuit shall be provided at the input of the amplifiers. This circuit shall provide an input voltage of rectangular wave form in single pulses with an accuracy (including any transients) of ±5 per cent of the indicated voltage(s).

(*b*) The American Electroencephalographic Society recommends the following values for the indicated voltages of the calibrator: 5, 10, 20, 50, 100, 200, 500, 1,000 V.

5. *Meters.*—The American Electroencephalographic Society recommends that suitable meters or suitable test points for connecting meters should be provided to measure (*a*) the voltage of the calibration battery, (*b*) the voltage of all A and B batteries used in the amplifiers, and (*c*) the resistance or impedance of any two electrodes attached to the patient. A polarity reversing switch should be provided to make it possible to check the effect of electrode polarization on measurements of resistance.

6. *Noise and Vibration.*—The construction of the apparatus shall be such that no external insulation from mechanical vibration or from noise within the apparatus is required to prevent damage or to avoid spurious deflections in the record. The American Electroencephalographic Society recommends that the noise and vibration should be such that its effect on the patient will be negligible.

7. *Finish.*—All exposed surfaces should be resistant to the action of sodium chloride solution and to any recording fluids that are recommended by the manufacturer.

8. *Labels.*—(*a*) The electroencephalograph shall have a name plate giving the manufacturer's name, the serial number, the voltage and frequency (or frequencies) of the power supply and the power consumed by the electroencephalograph.

(*b*) All test points, dials, switches, etc., shall be clearly and appropriately labeled.

(*c*) The American Electroencephalographic Society recommends that a pilot light be provided to indicate when any power supply is switched on.

9. *Continuity of Operation.*—(*a*) The requirements specified in sections B1, 2, 3, 4, 5, 6 and 7 shall be attained within fifteen minutes of switching on and shall be maintained for a period of 24 hours of continuous operation.

(*b*) One hour of continuous recording at a speed of 30 mm. per second shall be possible without replacement of recording materials.

10. *Life.*—The requirements specified in sections B1, 2, 3, 4, 5, 6 and 7 shall be guaranteed by the manufacturer for a period of 1,000 hours' use or one year from date of shipment, which-

ever is less, exclusive of battery replacements or recharging and of tubes which may be guaranteed by their manufacturer.

11. *Safety.*—The apparatus shall conform in all respects to the recommendations of the Underwriters' Laboratory regarding the safety of the patient and the operator and also regarding fire hazard. There shall be no direct current coupling between the input grids of an amplifier and the patient. There should be no possibility of high voltage reaching the electrodes attached to the patient.

12. *Portable Apparatus.*—(*a*) In portable apparatus each unit of the equipment should be limited to a weight not exceeding 40 pounds.

(*b*) The visibility of the record need not meet the requirements of specification D1. Otherwise portable equipment shall fulfil the requirements of construction, performance, life, etc., as listed.

F. Information and Instructions

Adequate instructions shall be provided for the proper care and upkeep of the instrument. The American Electroencephalographic Society recommends that a functional wiring diagram of the amplifier circuits together with appropriate service information be supplied with each apparatus. It is highly desirable that a complete wiring diagram with schedule of values be provided.

G. Marketing and Advertising

Rules of the Council on Physical Medicine shall be adhered to by manufacturers of acceptable electroencephalographs.

REPORT OF THE COUNCIL

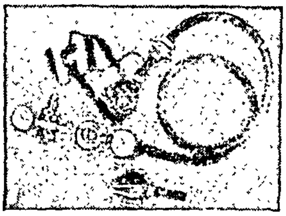
The Council on Physical Medicine has authorized publication of the following report. Howard A. Carter, *Secretary.*

M.S.A. PNEOPHORE ACCEPTABLE

Manufacturer: Mine Safety Appliances Company, Braddock, Thomas and Meade Streets, Pittsburgh 8.

The M.S.A. Pneophore is an apparatus for administering oxygen by intermittent positive pressure where breathing has been arrested or impaired. It consists of the following:

1. A high pressure reducing valve which reduces cylinder pressure to 3.4 atmospheres (2,600 mm. of mercury). A gage to indicate the oxygen cylinder pressure is part of this assembly.
2. A low pressure regulator equipped to reduce the pressure from 50 pounds per square inch to an adjustable pressure range from 0 to 30 centimeters of water (0 to 22 mm. of mercury).
3. A gage calibrated in centimeters of water to indicate the pressure being delivered.
4. A 6 foot (183 cm.) length of rubber tubing.
5. A differential pressure valve which converts a continuous positive pressure into an intermittent positive pressure, thus acting as an automatic respirator.
6. Two positive pressure face pieces, each with a 4 inch (10 cm.) length of tubing attached.


M.S.A. Pneophore

The apparatus is contained in a carrying case (optional) that is constructed of plywood and fiber with metal-reinforced corners and measures 41 by 30 by 20 cm. (16 by 12 by 8 inches). It weighs 3.7 Kg. (8½ pounds); the shipping weight is 5.4 Kg. (12 pounds).

After consideration of the available evidence the Council concluded that the apparatus is acceptable for use in medical institutions under the direction of a physician. It may be used in cases of respiration failure—e. g., poliomyelitis—for a short period of time (one hour or less) as emergency equipment under the direction of a physician. Because evidence at hand was not sufficient to establish its usefulness as an emergency respirator by fire departments and rescue squads or as a respirator for prolonged use in cases of infantile paralysis, it was not recommended for these purposes. With these reservations, the Council on Physical Medicine voted to include the M.S.A. Pneophore in its list of accepted devices.

Council on Foods and Nutrition

THE VITAMIN B COMPLEX

C. A. ELVEHJEM, Sc.D.
Madison, Wis.

This paper was prepared at the request of the Council and is one of a series appearing in The Journal. Later the entire series will appear in book form as the Council's Handbook of Nutrition. James R. Wilson, M.D., *Secretary.*

The group of dietary factors, the vitamin B complex, is included in the larger class of water-soluble vitamins because, like all vitamins, they are required by the body in small amounts and because the individual chemical compounds are soluble in water although the degree of solubility varies from the sparingly soluble riboflavin to the readily soluble choline. These are the main characteristics common to the individual vitamins because their functions in the living cell may differ greatly and their chemical structure may vary from the simple configuration of nicotinic acid to the more complex molecular structure of thiamine and riboflavin. The vitamin B complex is usually differentiated from the other water-soluble vitamins, such as vitamin C and related factors, on the basis of the source material used in early isolation work and the kind of experimental animals employed for the assay.

No attempt will be made to cover in this short summary the vast amount of literature which is accumulating on the water-soluble vitamins. A symposium entitled "The Vitamins,"[1] published by the American Medical Association in 1939, includes a survey of the facts known at that time. This chapter is a revised form of chapter 11 in the first "Handbook of Nutrition"[2] and will include only a general summary of the more significant facts, and reference will be made to original papers only when they have been published within the past few years. Since this review will stress the nutritional importance of these vitamins, the description of the clinical aspects of the deficiency diseases resulting from their deficiency will of necessity be limited. A recent publication by Jolliffe, Tisdall and Cannon[3] includes a description of the clinical symptoms.

The B complex now is known to consist of at least a dozen separate factors, ten of which can be obtained in crystalline form. Each factor will be discussed separately and in more or less chronologic order of its recognition and identification.

THIAMINE

Thiamine hydrochloride is a white crystalline substance readily soluuble in water, possessing a nutlike and salty taste and a yeastlike odor. The empiric formula is $C_{12}H_{18}N_4OSCl_2$, and the compound has the structural formula shown in figure 1.

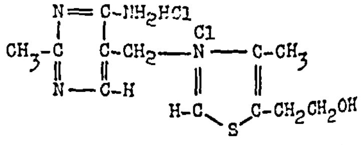


Fig. 1.—Structural formula of thiamine hydrochloride.

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[1] The Vitamins, Chicago, American Medical Association, 1939.

[2] Handbook of Nutrition, Chicago, American Medical Association, 1943.

[3] Jolliffe, N.; Tisdall, F. F., and Cannon, P. R.: Handbook on Clinical Nutrition, to be published.

It is rapidly destroyed in neutral or alkaline solutions because of hydrolytic cleavage into its constituent pyrimidine and thiazole rings, but in acid solutions it can be sterilized for half an hour at 120 C. without appreciable loss of activity. In the dry form it is very stable and is not readily destroyed by oxidation. Its activity is rapidly destroyed by sulfite, a fact which may explain the loss of thiamine during the sulfuring of fruits. This vitamin also seems to be very rapidly destroyed in dehydrated meats and vegetables when the moisture content is approximately 5 per cent.

In foods and in tissues it occurs both in the free form and as thiamine pyrophosphate or cocarboxylase. In the latter form it functions in the living cell as a coenzyme in carbohydrate metabolism, especially in the metabolism of alpha-keto acids. In thiamine deficiency the utilization of carbohydrate is incomplete and pyruvic acid accumulates in the tissues, a condition which is used in determining thiamine insufficiency. Many of the symptoms which have been observed in beriberi may be related to faulty carbohydrate metabolism, although it is still difficult to differentiate an uncomplicated thiamine deficiency from multiple deficiencies. Some of the nerve lesions which have been described in experimental animals suffering from polyneuritis are certainly related to a deficiency of riboflavin, but there is also good evidence that a lack of thiamine may directly cause neuropathy.

The variety of symptoms seen in human beings has been summarized by Williams and Spies,[4] Jolliffe[5] and Jolliffe and his co-workers.[3] Wilder[6] has pointed out that the type of symptoms produced depends to a considerable extent on the rate at which the deficiency develops, but in all cases the subjects become depressed, irritable, quarrelsome, uncooperative and fearful. A relationship between thiamine deficiency and cardiac function has been recognized for many years, and Blankenhorn and his co-workers[7] have recently suggested seven criteria for the diagnosis of "beriberi heart." Anemia of the hyperchromic type has also been described in a number of thiamine-deficient patients.

The Food and Nutrition Board of the National Research Council recommends 1.2 to 1.8 mg. as the daily thiamine allowance for the average adult man. The minimum daily requirement as established by the United States Food and Drug Administration is 1 mg. The requirement is increased in periods of active growth and during pregnancy and lactation. Pathologic conditions, such as fevers and hyperthyroidism, in which there is a general increased metabolism, also increase the requirement. The effect of external temperature on the thiamine requirement of experimental animals has been given considerable attention. Mills[8] originally reported that rats need twice as much thiamine per unit of food at 91 F. as at 65 F. However, in more recent work by Kline, Friedman and Nelson[9] in which suboptimal levels of thiamine were used, evidence was presented to show that as the environmental temperature is increased, the daily requirement for thiamine is decreased.

Diets rich in fat have a definite sparing action on the requirement of thiamine in both rats and dogs. This is undoubtedly because fat metabolism does not require cocarboxylase. The human diet may rarely undergo sufficient change in fat content to alter materially the thiamine requirement. Cahill,[10] studying the urinary excretion of thiamine in human subjects, could observe no increase when part of the carbohydrate was replaced by fat.

The two commonest methods in use today for the quantitative estimation of thiamine are the thiochrome method and the yeast fermentation method. The detailed procedures are given in *Biological Symposia.*[11] The rat assay procedure is still recognized as the official method and is described in the "Pharmacopeia of the United States," thirteenth revision.

TABLE 1.—*Vitamin Content of a Few Typical Foods*

Foods[*]	Thiamine[†]	Riboflavin[†]	Niacin[†]	Pantothenic Acid[†][‡]	Vitamin B6[†][‡]	Biotin[†][‡]	Folic Acid[†][‡]
Apples	0.04	0.02	0.2	0.05	0.03	.....	....
Bananas	0.09	0.06	0.6	0.18	0.30	.....	0.01
Bread							
White (unfortified)	0.08	0.13	0.8	0.40	0.20	.....	....
White (fortified)	0.24	0.15	2.2	0.40	0.20	.....	....
Cabbage	0.07	0.06	0.3	0.48	0.29	.....	0.01
Carrots	0.07	0.06	0.5	0.24	0.19	0.002	0.01
Cheese	0.01	0.50	0.1	0.35	0.20	0.002	....
Cornmeal, degerminated	0.15	0.06	0.9	....	0.25	.....	0.02
Eggs, whole fresh	0.12	0.34	0.1	2.70	....	0.025	0.01
Meat							
Beef	0.12	0.15	5.2	1.10	0.40	0.004	0.02
Pork loin	1.04	0.20	4.4	1.50	0.60	0.005	0.01
Poultry, chicken or turkey	0.10	0.18	8.0	0.90	0.20	0.01	....
Liver, pork or beef	0.27	2.80	16.1	5.20	0.80	0.1	0.08
Milk, whole fluid	0.04	0.17	0.1	0.30	0.07	0.005	....
Oatmeal	0.65	0.14	1.1	1.30	0.25	.....	0.03
Oranges	0.08	0.03	0.2	0.12	....	.....	0.01
Peas, fresh	0.36	0.18	2.1	0.60	0.05	0.002	0.03
Peanuts, roasted	0.30	0.16	16.2	2.5	0.30	.....	....
Potatoes	0.11	0.04	1.2	0.40	0.10	.....	0.01
Spinach	0.12	0.24	0.7	0.7	0.08	0.002	0.18
Tomatoes	0.06	0.04	0.6	0.37	0.07	0.002	0.01
Turnips	0.06	0.06	0.5	0.25	0.10	0.002	....
Yeast, Brewers' dry	9.69	5.45	36.2	20.00	2.90	0.2	0.7
Wheat, whole	0.56	0.12	5.6	1.30	0.40	0.005	0.05

[*] Edible portion.

[†] Values are given in milligrams per hundred grams.

[‡] Values for pantothenic acid, pyridoxine (vitamin B_6), biotin and folic acid are based on data from only a limited number of samples. Some of the values may be low because of incomplete liberation of the vitamin. This is especially true in the case of pantothenic acid. For example, Nielands and Strong[88] found 3 mg. in 100 Gm. of spinach after maximum liberation and only 0.7 mg. by the old method. Dried yeast was observed to contain 40 mg. and fresh eggs 5.0 mg.

In table 1 are presented figures for the vitamin content of a few typical foods. It is evident that only a few foods can be classified as rich sources of thiamine; they include peas, beans, oatmeal, whole wheat and enriched flour and bread, lean pork and peanuts. However, one must not overlook the staple foods, such as milk, vegetables and fruits, which may contribute appreciable amounts of thiamine in the diet although the amount per unit of weight is relatively low. It is well known that significant amounts of thiamine may be lost during the preparation of foods, because of the fact that the vitamin is readily soluble in water and easily destroyed by moist heat. Under normal conditions there is probably little destruction of thiamine in the digestive tract, although intestinal disturbance may seriously retard the absorption of this vitamin.

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[4] Williams, R. R., and Spies, T. D.: Vitamin B_1 (Thiamin) and Its Use in Medicine, New York, The Macmillan Company, 1938.

[5] Jolliffe, N.: Recent Advances in Clinical Applications of the B Vitamins, J. Am. Dietet. A. **17**: 5 (Jan.) 1941.

[6] Wilder, R. M.: Nutritional Problems as Related to National Defense, Am. J. Digest. Dis. **8**: 243 (July) 1941. Williams, R. D., and Mason, H. L.: Further Observations on Induced Thiamine (Vitamin B_1) Deficiency and Thiamine Requirement of Man, Proc. Staff Meet., Mayo Clin. **16**: 433 (July 9) 1941.

[7] Blankenhorn, M. A.; Vilter, C. F.; Scheinker, I. M., and Austin, R. S.: Occidental Beriberi Heart Disease, J. A. M. A. **131**: 717 (June 29) *1946.*

[8] Mills, C. A.: Vitamin and Protein Requirements at Different Temperatures, Am. J. Physiol. **133**: 390 (June) 1941; Environmental Temperatures and Thiamine Requirements, ibid. **133**: 525 (July) 1941.

[9] Kline, O. L.; Friedman, L., and Nelson, E. M.: The Effect of Environmental Temperature on Thiamine Requirement of the Rat, J. Nutrition **29**: 35 (Jan.) 1945.

[10] Cahill, W. M.: Urinary Excretion of Thiamine on High Fat Diets, J. Nutrition **21**: 411 (April) 1941.

[11] Kline, O. L., and Friedman, L.: Micro-Biological Assay Methods of Thiamine, Biological Symposia **12**: 65-85, 1947.

The possible availability of thiamine synthesized by the bacterial flora of the gastrointestinal tract must not be overlooked, although it appears that less thiamine is produced than some of the other B vitamins.[12] It is also important to mention that the ingestion of live yeasts may render thiamine consumed in other foods unavailable for human beings (Parsons, Williamson and Johnson[13]). Severe thiamine deficiency can be produced in mice by feeding pyrithiamine, the pyridine analogue of thiamine (Woolley and White[14]), but the deficiency can be overcome by administration of an excess amount of thiamine.

Recently a factor destructive of vitamin B_1 has been found in raw fish. Green, Carlson and Evans[15] observed a type of paralysis in foxes fed diets containing 20 per cent fresh carp and identified the condition as a thiamine avitaminosis analogous to Wernicke's disease. Further studies[16] on the mechanism of inactivation point to an enzymatic destruction. Nonenzymatic thiamine-destroying factors have been found in seeds and in fern (Pteris aquilina) by Weswig, Freed and Haag.[17]

RIBOFLAVIN

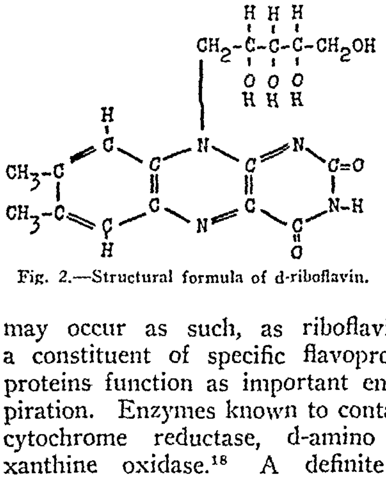

Fig. 2.—Structural formula of d-riboflavin.

Riboflavin is a practically odorless orange-yellow crystalline compound, which in water solution shows a characteristic yellow-green fluorescence. The empiric formula is $C_{17}H_{20}N_4O_6$, with the structural formula as shown in figure 2.

This vitamin is rather heat stable, especially in acid mediums, but extremely labile when exposed to light. In nature riboflavin may occur as such, as riboflavin phosphate or as a constituent of specific flavoproteins. These flavoproteins function as important enzymes in tissue respiration. Enzymes known to contain riboflavin include cytochrome reductase, d-amino acid oxidase and xanthine oxidase.[18] A definite reduction in the tissue concentration of the latter enzymes has been observed in riboflavin-deficient animals.[19] Aside from retarded growth in young animals, other symptoms include dermatitis and cataract in rats and characteristic paralysis in chicks. Work by Baum, Michaelree and Brown[20] indicates that the incidence of cataract in rats is increased if the diet supplies a small amount (1 to 2 micrograms daily) of riboflavin. Phillips and Engel have shown a specific neuropathologic condition of the main peripheral nerve trunks in chicks on low riboflavin rations. Similar changes were not observed in the rat until the riboflavin deficiency was aggravated by an increased fat content of the diet.[21] Both acute and chronic riboflavin deficiency has been studied in dogs.[22] On a diet very low in this vitamin a characteristic collapse syndrome and sudden death are observed in six to eight weeks. Prolonged subsistence on a diet low in riboflavin leads to neurologic abnormalities accompanied with myelin degeneration of peripheral nerves and the posterior columns of the spinal cord. Street, Cowgill and Zimmerman[22] have shown that opacities of the cornea may occur in the dog as well as in the rat.

Severe riboflavin deficiency has been produced in the monkey with no evidence of corneal changes.[23] The symptoms include lack of growth, dermatitis and anemia. Warkany and Schraffenberger[24] have described congenital defects and malformations of the skeleton of rats due to a low intake of riboflavin during the gestation period.

In human beings the symptoms include inflammation of the lips, fissures at the corners of the mouth, glossitis, dermatitis and vascularizing keratitis.[25] The ocular symptoms first described by Sydenstricker and his co-workers[26] appear to be constant and may appear *before other symptoms of the deficiency.* There is still considerable difficulty in distinguishing the glossitis or riboflavin deficiency from that of pellagra, pernicious anemia or iron deficiency and in distinguishing ocular ariboflavinosis from other conditions involving corneal vascularization.

The riboflavin content of foods may be determined by measuring the growth response obtained in chicks or rats maintained on basal rations low in the vitamin, but the more rapid microbiologic method of Snell and Strong[27] is now used extensively. Chemical methods involving measurement of fluorescence are also being used.[28] Riboflavin is widely distributed in plant and animal materials. *Liver, milk and green leafy vegetables* may be considered the best and most reliable sources in the human dietary. Seeds, which are so important as a source of thiamine, are poor sources of riboflavin.

The Food and Nutrition Board recommends 1.8 mg. of riboflavin as the daily allowance for men, and the Food and Drug Administration has accepted 2 mg. a day as the minimum daily requirement. The limited values in table 1 show that one serving of liver will adequately meet the daily allowance, that 1 quart of milk will supply the minimum requirement and that one serving of cheese or eggs will supply one fourth of the daily requirement. There is also considerable evidence for the bacterial synthesis of riboflavin in the intestinal tract and that some of this riboflavin can be utilized. Mannering and his co-workers[29] observed that with suboptimal intakes of riboflavin rats receiving a diet high in dextrin or starch grew better than those receiving sucrose-containing diets. When the diet was high in lactose the riboflavin excretion in the feces was many times the dietary intake. Denko and his co-workers[12b] observed the fecal excretion in human subjects to be three times greater than the intake during periods in which there was a low riboflavin intake. Hathaway and Lobb[30] observed a greater excretion when their subjects consumed natural foodstuffs than when they received purified diets, although the intake was the same. Sure and Dichek[31] have demonstrated, in the case of rats, that riboflavin has a pronounced beneficial effect on the economy of food utilization for the synthesis of body tissues. In this connection it is interesting to note that Murlin and his co-workers[32] reported that the biologic value of proteins in bread is improved in the presence of extra B vitamins.

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[12] (*a*) Najjar, V. A., and Holth, L. E., Jr.: The Biosynthesis of Thiamine in Man, J. A. M. A. **123:** 683 (Nov. 13) 1943. (*b*) Denko, C. W.; Grundy, W. E.; Wheeler, N. C.; Henderson, C. R.; Berryman, G. H.; Friedemann, T. E., and Youmans, J. B.: The Excretion of B-Complex Vitamins by Normal Adults on a Restricted Intake, Arch. Biochem. **11:** 109 (Sept.) 1946.

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[15] Green, R. G.; Carlson, W. E., and Evans, C. A.: A Deficiency Disease in Foxes Produced by Feeding Fish, J. Nutrition **21:** 243 (March) 1941.

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[19] Axelrod, A. E., and Elvehjem, C. A.: The Xanthine Oxidase Content of Rat Liver in Riboflavin Deficiency, J. Biol. Chem. **140:** 725 (Sept.) 1941.

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[21] Shaw, J. H., and Phillips, P. H.: The Pathology of Riboflavin Deficiency in the Rat, J. Nutrition **22:** 345 (Oct.) 1941.

[22] Street, H. R.; Cowgill, G. R., and Zimmerman, H. M.: Further Observations of Riboflavin Deficiency in the Dog, J. Nutrition **22:** 7 (July) 1941.

[23] Cooperman, J. M.; Waisman, H. A.; McCall, K. B., and Elvehjem, C. A.: Studies on the Requirements of the Monkey for Riboflavin and a New Factor Found in Liver, J. Nutrition **30:** 45 (July) 1945.

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[25] Sebrell, W. H., and Butler, R. E.: Riboflavin Deficiency in Man, Pub. Health Rep. **53:** 2282 (Dec. 30) 1938. Sydenstricker, V. P.; Geeslin, L. E.; Templeton, C. M., and Weaver, I. W.: Riboflavin Deficiency in Human Subjects, J. A. M. A. **113:** 1697 (Nov. 4) 1939.

[26] Sydenstricker, V. P.; Sebrell, W. H.; Cleckley, H. M., and Kruse, H. D.: The Ocular Manifestations of Ariboflavinosis: A Progress Note, J. A. M. A. **114:** 2437 (June 22) 1940.

[27] Snell, E. E., and Strong, F. M [illegible] Assay for Riboflavin, Indust. & Engin. Chem. (A [illegible] 1939.

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NICOTINIC ACID

Nicotinic acid occurs as white needle-like crystals, is nonhygroscopic and stable in air and has the empiric formula $C_6H_5O_2N$. The structural formula of both the acid and the physiologically active amide are shown (*fig.* 3).

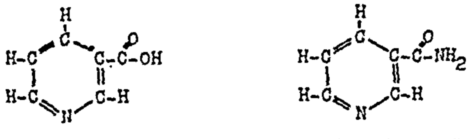

Fig. 3.—Structural formula of nicotinic acid (niacin) (left) and nicotinic acid amide (niacin amide) (right).

The sensation of flushing and erythema of the skin which is often observed on administration of nicotinic acid is not produced by nicotinic acid amide. Nicotinic acid is a comparatively weak acid, and its alkaline salts in solution show a slightly alkaline reaction. It is stable to autoclaving temperatures when in solution and shows no loss of activity when exposed to dry heat. Owing to numerous objections to the term nicotinic acid, niacin and niacin amide are used as synonyms for the acid and amide.

In the body nicotinic acid functions as a component of two important coenzymes, coenzyme I, or cozymase, and coenzyme II, which are concerned in both glycolysis and respiration.[33] The structure of the two coenzymes is similar, differing only in the number of phosphoric acid units. Coenzyme I is a diphosphopyridine nucleotide, and coenzyme II is a triphosphopyridine nucleotide. In nicotinic acid deficiency it is possible to demonstrate a decreased cozymase content of the liver and muscle tissue. There has been some question about the cozymase content of the blood during deficiency, but all workers[34] are now agreed that the change, if demonstrable, is very slight. It is thus impossible to use this method in the diagnosis of nicotinic acid deficiency.

The dog was used as the experimental animal in all of the early work on the antipellagra vitamin. Blacktongue in the dog was first described by Chittenden and Underhill, and in 1922 Goldberger and his co-workers concluded that blacktongue in dogs was analogous to pellagra in human beings. Through the use of highly purified rations supplemented with the newer B vitamins, it has been possible to demonstrate that the growing chick needs a dietary source of nicotinic acid for optimum growth and for the prevention of chick blacktongue.[35] In the rat niacin is an essential nutrient only when the tryptophan content of the diet is low.[36] The high incidence of pellagra, when the diet contains much corn, is undoubtedly due not only to the low amount of niacin in corn but to the fact that the main protein in corn, zein, is very low in tryptophan. A definite relationship between the niacin requirement and the protein part of the diet has been demonstrated in several different species, and it is apparent that the conversion of tryptophan to niacin is the most limited in the dog. An increased excretion of N′-methylnicotinamide on administration of tryptophan has been observed in rats[37] and in human beings.[38]

The early symptoms of pellagra are weakness, lassitude, anorexia and indigestion, followed by sore and ulcerated mouth and diarrhea. The typical dermatitis usually simplifies the diagnosis. A more detailed summary of the symptoms has been made by Harris[39] and by Youmans.[40] Spies, Walker and Woods[41] have shown that infants and children also suffer from nicotinic acid deficiency in areas where pellagra is endemic, although typical lesions are seldom seen in early infancy. Nicotinic acid is now widely used in the treatment of pellagra, but its use is most successful in conjunction with other vitamins and specific natural foods.

The activity of various compounds related in structure to nicotinic acid was investigated by Woolley and his co-workers,[42] and it was concluded that only those compounds which may undergo oxidation or hydrolytic conversion to nicotinic acid are active in the dog. Since that time some activity has been observed in human beings with quinolinic acid, pyrazine 2,3-dicarboxylic acid and pyrazine monocarboxylic acid. A paper by Dann, Kohn and Handler[43] summarized much of the work on these compounds, and from their results, as well as results in this laboratory, one may conclude that the activity of these compounds is greatly inferior to that of nicotinic acid.

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Since nicotinic acid is not required by the rat unless there is an amino acid imbalance in the diet, the dog originally used by Goldberger and his co-workers for the assay of the antipellagra potency of foods is the only animal that has been used with any success. Fairly accurate values can be obtained by comparing the growth response obtained by feeding a definite weight of food with that obtained after giving a standard dose of nicotinic acid.[44] Chemical methods may be used on many foods, and an improved method has been described by Dann and Handler.[45] The most widely used method is the microbiologic method of Snell and Wright,[46] and this method gives reliable results when proper precautions are taken for the release of the vitamin in certain foods. The best sources of nicotinic acid include liver, yeast, lean meats and, to a lesser extent, peanuts, potatoes and vegetables.

It is difficult to establish an exact figure for the nicotinic acid requirement of human beings. Balance experiments are complicated by the fact that excess nicotinic acid ingested is excreted in several different forms. N′-methyl nicotinamide is the product which has received most attention.[47] Even when human subjects are given large doses of niacin, never more than 30 to 40 per cent of the dose can be accounted for.[48]

However, Knox and Grossman[49] have identified the corresponding 6-pyridone, which is an oxidation product, and this may account for much of the remainder. The niacin requirement is not only dependent on the dietary tryptophan but part of the niacin requirement may be satisfied through bacterial synthesis in the digestive tract (Ellinger and Benesch[50]). The Food and Nutrition Board has suggested 12 to 18 mg. as the daily allowance for an adult man, and the minimum requirement has been set at 10 mg. per day.

One may readily ascertain from table 1 why pellagra will develop with diets containing high percentage of corn meal and patent flour. These materials contain 1 to 1.5 mg. per 100 Gm., and one would have to consume 1,000 Gm. to meet the minimum requirement, which, of course, is impossible. In contrast to corn, wheat contains 5 to 7 mg. per 100 Gm. and would be a reliable source of nicotinic acid if 80 to 90 per cent were not removed during the milling process.[51] Whole oats are also low in nicotinic acid but barley is somewhat higher. One serving of liver will supply the daily allowance, and one serving of lean meat will supply over half of the daily requirement. Since nicotinic acid is a very stable compound, there is little destruction during cooking and the loss is negligible unless the cooking water is discarded. Although milk and eggs are low in niacin, these foods are important in the prevention of pellagra because they carry a good supply of tryptophan. Certain compounds may function as antagonists to niacin, for example, 3-acetyl pyridine, but these compounds apparently do not occur in nature in sufficient concentration to affect the niacin requirement.

VITAMIN B_6

The term "vitamin B_6" was first applied by György to a substance present in yeast which was active in the prevention and cure of a specific type of acrodynia in rats. A specific compound was subsequently isolated in pure form almost simultaneously (1938) in five different laboratories, and it was synthesized the following year by Harris and Folkers.[52] Pyridoxine hydrochloride is a white crystalline powder, slightly bitter in taste and odorless, and possesses the empiric formula $C_8H_{12}O_3NCl$.

In 1944 it was shown[53] that two derivatives of pyridoxine, namely, pyridoxal and pyridoxamine, were more active than the original compound for the growth of certain lactic acid bacteria. The three compounds have the structural formula shown in figure 4.

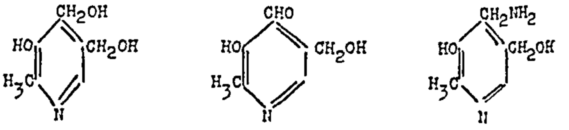

Fig. 4.—Structural formula (from left to right): pyridoxine, pyridoxal and pyridoxamine.

All three compounds are highly active in curing vitamin B_6 deficiencies in animals. All three forms occur in natural materials, although many tissues, particularly animal tissues, and yeast contain predominantly pyridoxal and pyridoxamine. Phosphorylated pyridoxal functions as a coenzyme for those enzymes which decarboxylate tyrosine, arginine, glutanic acid, "dopa," the precursor of melanin, and possibly other amino acids.[54] It also functions in reactions involving transamination[55] and tissues from pyridoxine deficient rats show a reduced amount of transaminase.[56] Pyridoxine is also closely related to tryptophan metabolism, since Lepkovsky and Nielsen[57] observed abnormal pigment in the urine of pyridoxine-deficient rats, and this was later identified as xanthurenic acid. Umbreit,

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Wood and Gunsalus[58] have shown that pyridoxal phosphate functions in the formation of tryptophan from indole and serine. There also appears to be a functional relation between unsaturated fatty acids and the vitamin.[59]

Pyridoxine has been shown to be essential in the nutrition of the rat,[60] the chick,[61] the dog[62] and the pig.[63] An acrodynia-like syndrome, characterized by edema, swelling and denuding of the paws and areas around the mouth and frequent thickening of the ears, is associated with pyridoxine deficiency in the rat,[64] although it has been demonstrated[65] that a lack of this vitamin may cause retarded growth without the dermatitis. The microcytic hypochromic anemia in dogs resulting from pyridoxine deficiency, reported by Fouts and his co-workers,[62] has been amply confirmed.[66]

No clearcut symptoms resulting from pyridoxine deficiency have been described in human beings. Spies, Bean and Ashe[67] have reported an additional improvement in pellagrins with pyridoxine therapy after treatment with nicotinic acid, riboflavin and thiamine. Smith and Martin[68] observed a rapid and satisfactory healing of the typical lesions of cheilitis with vitamin B_6 therapy. Although clinical treatment of such conditions as Parkinson's disease, muscular dystrophy and paralysis agitans has been studied, the results are not definite enough to permit postulation of the action of the vitamin or to associate any one of these syndromes with specific lack of pyridoxine in the diet. The human requirement is unknown, but animal experiments indicate that the vitamin B_6 requirement may be about the same as for thiamine, namely, about 1.5 mg. a day.

The most reliable method for determining the B_6 content of foods is probably the rat assay method,[65] although microbiologic methods involving Saccharomyces carlsbergensis and neurospora give values that are in reasonably good agreement with those obtained by rat assay.[69] Among the best sources are rice, bran, liver, yeast, cereals, legumes and milk. Whole wheat contains about 0.4 mg. in 100 Gm., most meats 0.4 to 0.8 mg. in 100 Gm. when fresh,[70] fresh vegetables about 0.2 mg. in 100 Gm. and milk about 1 mg. per quart (liter). Swaminathan[71] found diets consumed in India to supply 3.5 to 5 mg. a day.

PANTOTHENIC ACID

The member of the B complex which prevented dermatitis in chicks was first called the "filtrate factor." Although the so-called filtrate fractions prepared from liver extract were effective in the prevention of blacktongue in dogs, pellagra in human beings and dermatitis in chicks, it was demonstrated as soon as nicotinic acid was accepted as the antipellagra factor that the activity of these fractions in the prevention of chick dermatitis was not due to the nicotinic acid present but to a separate and distinct vitamin. Shortly thereafter, Woolley, Waisman and I[72] and Jukes[73] independently demonstrated that pantothenic acid, which Williams and his co-workers[74] had shown to be a growth factor for yeast as early as 1933, was similar to the chick antidermatitis factor. The complete synthesis of pantothenic acid was achieved in 1940.[75] The vitamin is now available as the dextrorotatory calcium salt, which occurs in fine dense white crystals that are odorless and slightly bitter in taste. The empiric formula is $(C_9H_{16}NO_5)_2Ca$. The structural formula for the free acid is shown in figure 5.

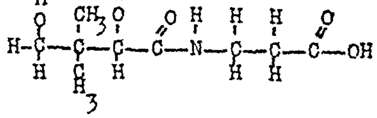

Fig. 5.—Structural formula for pantothenic acid.

Pantothenic acid is fairly stable when subjected to moist heat, especially at a neutral p_H, but is destroyed by prolonged dry heat. The compound is readily hydrolyzed into the two component parts in alkaline solution. The compound is widely distributed in nature, and recent work has shown that much of the vitamin may be present in bound forms. Lipmann and his co-workers[76] have shown that pantothenic acid is related to enzymatic acetylation. It was first shown[77] that a coenzyme was present in liver preparations which was necessary for the acetylation of aromatic amines. Later it was found[78] that the same coenzyme was needed for the acetylation of choline in brain tissue. This coenzyme was prepared in concentrated form and observed to contain about 10 per cent pantothenic acid. If pantothenic acid is related to all the biologic acetylations, it has a very important function. Riggs and Hegsted[79] have recently shown that acetylation of intraperitoneally administered p-aminobenzoic acid in rats was definitely reduced when the animals were given a diet deficient in pantothenic acid. The addition of the vitamin corrected the abnormality.

Rats placed on diets low in pantothenic acid grow very poorly, and in a few weeks necrosis of the adrenal cortex develops, which was first described by Daft and Sebrell.[80] Changes in hair pigmentation (graying) have been observed in many laboratories when black or piebald rats were used. Unna, Richards and Sampson[81] have published reproductions of photographs illustrating these fur changes in nutritional achromotrichia. Schaefer, McKibbin and I[82] have produced acute deficiencies of pantothenic acid in dogs that are characterized by sudden collapse associated with decreased blood dextrose, increased nonprotein nitrogen and lowered levels of blood chlorides. Severe intussusception in the intestinal tract and fatty livers have also been observed. Phillips and Engel[83] have reported specifi[illegible] changes of the spinal cord in chicks [illegible] ficiency of pantothenic acid. Wintrobe, Miller and Lisco[84] have also observed *neuropathologic changes in pigs on synthetic diets low* in pantothenic acid and other members of the B complex.

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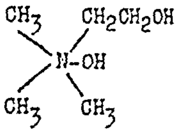
In spite of these interesting symptoms in experimental animals, little is known about the real significance of pantothenic acid in nutrition of human beings. Spies and his co-workers[85] concluded from studies based largely on values of pantothenic acid in the blood that pantothenic acid is essential to nutrition of human beings. Krahnke and Gordon[86] have studied the excretion of pantothenic acid in persons on different levels of intake. However, no specific symptoms in human beings have been correlated with a deficiency of the vitamin. This may be due to the fact that pantothenic acid is widely distributed and that even restricted diets may not be low enough to cause a serious deficiency.

No figures can be given for the daily human requirement. The relatively high amount of pantothenic acid needed to produce good growth in rats on synthetic diets has led to the assumption that the requirement is considerably higher than that of some of the other B vitamins. However, work in this laboratory indicates that the requirement for dogs can be satisfied with 0.10 mg. per hundred grams ration, a level similar to that of thiamine and riboflavin. According to these results, the human requirement cannot be above 5 mg. a day.

The pantothenic acid content of foods may be measured by growth experiments with chicks, but the microbiologic methods[87] are now in more general use. However, in order to obtain the total pantothenic acid in foods when microbiologic methods are used, it is necessary to treat the material with a liver enzyme and an intestinal phosphatase.[88] Liver is one of the richest natural sources, but meats, cereals and milk are also reliable sources. A few studies[89] have been made on the loss of pantothenic acid during cooking; there is, as one would expect, some loss, the retention varying from 60 to 100 per cent. Evidence is available to show that only about one half of the pantothenic acid in whole wheat is lost during the milling process.

CHOLINE

Choline is a colorless viscous fluid, and the more familiar choline chloride is a very hygroscopic white crystalline substance, with a salty bitter taste. The formula for choline is shown in figure 6. As expected from its chemical constitution, the compound is not stable to alkali treatment, but is stable to acids even at elevated temperatures.



$$(CH_3)_3N(OH)CH_2CH_2OH$$

Fig. 6.—Structural formula for choline.

Choline has been recognized for many years as a component part of the phospholipid lecithin, but its functional importance in nutrition was not apparent until Best demonstrated its role in the prevention of fatty livers in depancreatized dogs.[90] Choline is now considered an important member of the B complex, because most experimental animals, when placed on diets low in this compound and its precursors, show characteristic symptoms. The most obvious changes include the development of fatty livers and hemorrhagic renal lesions. The high requirement of the young rat for choline has been stressed by Griffith,[91] who reported fatty degeneration of the liver, renal lesions, ocular hemorrhages and regression of the thymus within ten days after the rats had been placed on a choline-low, but otherwise adequate, diet. When the deficiency persists in animals which have fatty deposits in the liver, cirrhosis will develop. In the early stages, this secondary change is also reversible if adequate choline is added to the diet.

The function of choline must therefore be related to the mobilization of fatty acids in the body. Experiments with the dog and the rat have demonstrated that neutral fat is involved, since fatty livers induced by feeding high cholesterol diets do not respond to choline therapy. The observations of du Vigneaud and his collaborators[92] that the methyl groups of choline, as well as those of methionine and betaine, are transferable in the animal organism has led to the postulation that one of the functions of choline is to supply labile methyl groups. McHenry[90] stated that there is evidence now that choline may function in at least three ways: to stimulate the formation of phospholipids, to make possible the production of acetyl choline or to supply labile methyl groups.

Extensive reviews have been published on choline and the reactions involved in biologic transmethylation by Best and Lucas,[93] Jukes[94] and du Vigneaud.[95]

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Jukes[96] has shown that choline is one of the factors required in addition to adequate manganese to prevent slipped tendon in young turkeys. Sure[97] reported that choline is indispensable for lactation in adult rats and in the prevention of paralysis in suckling rats. Depression of the growth rate when choline is omitted from the diet has been observed in the case of the rat by Richardson, Hogan, Long and Itschner,[98] in the chick by Hegsted, Mills, Hart and me[99] and in the dog by Schaefer, McKibbin and me.[100]

The choline requirement, even for the rat, is difficult to establish, since the amount depends on the methionine and betaine content of the ration. Most of the synthetic rations which are now used for experimental work contain 100 mg. of choline in 100 Gm. From this figure one might suggest that the human requirement would be less than 500 mg. a day. It has been estimated that the choline intake from an average human diet may range from 250 to 600 mg. The problem of estimating accurately the choline content of food materials is also a difficult one, since most salts of choline are very soluble in water except a few, like the periodide and the reineckate, which have been used in quantitative estimations. The most specific methods for determining choline are the estimation of acetyl choline after acetylation and the use of the microbiologic assay involving the cholineless mutant (no. 34486) of Neurospora crassa. These methods have been reviewed by Handler.[101]

By far the best dietary source of choline is egg yolk, while soybean meal, liver, dried yeast, pancreas, brain and kidney are good sources. Most edible fats are very low in choline. It should be pointed out that free choline is rarely found in food materials and is present mainly as complex phosphoric acid esters. Most diets contain sufficient choline and its precursors to meet the ordinary needs. However, evidence is accumulating that some types of clinical cirrhosis are favorably affected by dietary treatment including choline and other vitamins, together with a high protein diet.

BIOTIN

Biotin was first recognized as a growth factor for yeast and was isolated by Kögl and Tonnis[102] in 1936. In 1940 du Vigneaud and his co-workers[103] demonstrated that biotin, the yeast growth factor, was the same as the anti-egg white injury factor, or vitamin H, in animal nutrition. György had carried out extensive studies on the properties of vitamin H, and, after it was shown that biotin was identical with this factor, du Vigneaud, Hofmann, Melville and György[104] described the isolation of biotin from liver. The structure was studied by du Vigneaud and co-workers,[105] and its synthesis was announced by Harris and his co-workers[106] in 1943. Free biotin has the structure shown in figure 7. It is a very stable compound, resisting autoclaving with strong mineral acids and in the form found in natural products is but slowly inactivated by alkali. The pure biotin, however, shows appreciable lability to alkali. Both the free and bound biotin are inactivated by oxidizing agents.

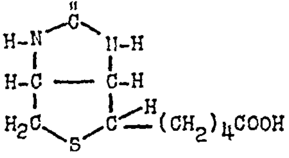

Fig. 7.—Structure of free biotin.

It has been known for many years that a characteristic syndrome can be produced in rats fed diets containing rather high amounts of raw egg white. Lease, Parsons and Kelly[107] observed that the rabbit and the monkey also exhibited a characteristic dermatitis when fed rations rich in egg white. As early as 1933 Parsons, Lease and Kelly[108] concluded that the injury involved an interrelation between a positive toxicity and a relative absence of a protective factor.

György, Rose, Eakin, Snell and Williams[109] have established the presence of "avidin" (an albumin) as the biotin-inactivating factor in egg white. Thus, it becomes apparent that egg white injury is due to the unavailability of biotin by virtue of being tied up with avidin, in which complex biotin cannot be absorbed from the intestine and is excreted in the feces. Nielsen and I,[110] using a more complete ration than had been used in the early work, were able to demonstrate a biotin deficiency in the rat fed 10 per cent levels of egg white. Typical symptoms of "spectacled eye" progressing to general alopecia and, in the later stages, the onset of a spasticity and final death of the animal were recorded. Even the severe symptoms of spasticity were cured when excess biotin (in excess of that which unites with the avidin) was added to the diet. With the synthetic diet without the egg white, these workers were unable to demonstrate any signs of biotin deficiency, and it seems probable that under most conditions the rat can synthesize, through the medium of bacteria in the intestine, sufficient biotin for its requirement. Biotin deficiency has been reported in the chick without resort to egg white diets, which seems to indicate that very limited synthesis of biotin in the intestinal tract must prevail. A typical dermatitis, involving the feet, was observed by Hegsted and his co-workers[111] to be characteristic of the deficiency in the chick, and Patrick and his co-workers[112] also noted similar dermatitis with turkeys on biotin-deficient rations. Waisman, McCall and I[113] described the production

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110. Nielsen, E., and Elvehjem, C. A.: Cure of Spectacle Eye Condition in Rats with Biotin Concentrates, Proc. Soc. Exper. Biol. & Med. **48:** 349 (Oct.) 1941.

111. Hegsted, D. M.; Oleson, J. J.; Mills, R. C.; Elvehjem, C. A., and Hart, E. B.: Studies on a Dermatitis in Chicks Distinct from Pantothenic Acid Deficiency, J. Nutrition **20:** 599 (Dec.) 1940.

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of chronic biotin deficiency in the monkey with biotin-deficient diets and acute biotin deficiency through the use of egg white.

Recent work has established a more definite role for biotin in metabolism. It apparently functions in the carboxylation of pyruvate to yield oxalacetate. Working with Lactobacillus arabinosus, Shive and his co-workers [114] and Lardy and his associates [115] have shown that either oxalacetate or aspartate can partially replace biotin in the growth of this organism. Another function of biotin can be replaced by oleic acid, and Potter and I [116] have shown that when both aspartic acid and oleic acid are present good growth can be obtained in the absence of biotin.

While rather definite requirements can be established for chicks, the requirement for many animals, including man, is difficult to establish, since a large part may be supplied by the intestinal bacteria. Oppel [117] showed that the urinary excretion of biotin in human subjects exceeded that in the diet and in all cases the biotin content of the feces was considerably higher. Sydenstricker and his co-workers [118] reported that dermatitis and changes in the color of the skin which responded to biotin were produced in human subjects by feeding diets with high levels of egg white. Some have experienced difficulty in repeating these observations, but the variations may depend on the degree of intestinal synthesis. In any case, there seems to be no difficulty in supplying an adequate amount of biotin in human beings on average diets.

Biotin can be conveniently determined by use of microbiologic methods of assay in which responses in yeast growth (Snell, Eakin and Williams [119]) or acid production by Lactobacillus casei (Shull, Hutchings and Peterson [120]) are measured. Biotin is rather ubiquitous in distribution, but liver, kidney, yeast and egg yolk are the chief sources. It is to be emphasized that in most tissues biotin is present in a "bound" state, in which it cannot be extracted by hot water, and autolysis or acid hydrolysis must be employed to realize the true concentration of biotin in these instances. Wright [121] summarized methods for the microbiologic determination of biotin as well as the compounds which inhibit the response of microorganisms to biotin.

INOSITOL

Inositol is a crystalline substance with a sweet taste and is a hexahydroxycyclohexane comparable to the cyclic form of glucose. The biologically active form of inositol is one of the optically inactive forms known as i-inositol or meso-inositol, with the stereochemical structure shown in figure 8.

It is a very stable compound, resisting strong acid and alkali treatment. It is found in plants, where it occurs in free form and as "phytin," a calcium magnesium salt of inositol phosphoric acid. In the animal body inositol is found in muscle (accounting for the term "muscle sugar"), brain, blood erythrocytes and eye tissues and as phytin in the red blood cells of chickens and turtles. It also occurs in lipositol, which is a complex containing inositol monophosphate linked to galactose and combined with ethanolamine, tartaric acid, oleic acid and various saturated fatty acids. Aside from its presence in biologic matter in the various forms, little is known about its specific function.

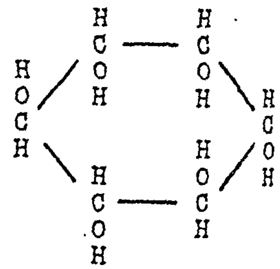

Fig. 8.—Structure of inositol.

The relation of inositol to the nutrition of animals was first indicated by the report of Woolley,[122] who isolated the substance from liver and showed it to be the constituent factor responsible for the cure of mouse alopecia. Later Pavcek and Baum [123] were able to demonstrate a growth response and a cure of spectacled eye in rats. The curative action and growth effect of inositol seems to be related to the amount and type of fat in the diet, since the syndrome was produced on fat-free or low butter fat rations and not on those containing 14 per cent "crisco." A recent report by Lindley and Cunha,[124] who worked with swine, indicates a possible interrelationship between inositol and biotin, and this may explain why inositol was active in the prevention of the spectacled eye condition in rats. Sure [125] has presented data which indicate that inositol may be required by the lactating rat. Martin, Thompson and de Carvajal-Forero [126] have injected rather low levels (10 mg. per kilogram of body weight) of inositol into dogs and observed intestinal motility to be greatly increased. A definite growth increment in the chick was obtained by feeding inositol in conjunction with a synthetic ration.[127] In the rat, inositol was observed to have an effect similar to lipocaic in preventing the fatty livers produced by the feeding of liver fractions or purified biotin preparations.[128]

Inositol can be determined in tissues and foods by using a microbiologic assay employing a specific strain of yeast as the test organism.[129] By this method of determination, Williams and his co-workers [130] have run large numbers of assays on various rat and beef tissues and observed spleen, heart, kidney, brain, thyroid and testes to be especially high in inositol content.

The requirements for inositol are not known. Deficiency symptoms in mice have been cured by feeding 10 mg. of inositol in 100 Gm. of food. Most purified

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114. Shive, W., and Rogers, L. L.: Involvement of Biotin in the Biosynthesis of Oxalacetic and *a*-Ketoglutaric Acids, J. Biol. Chem. **169:** 453 (July) 1947.

115. Lardy, H. A.; Potter, R. L., and Elvehjem, C. A.: The Role of Biotin in Bicarbonate Utilization by Bacteria, J. Biol. Chem. **169:** 451 (July) 1947.

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120. Shull, G. M.; Hutchings, B. L., and Peterson, W. H.: A Microbiological Assay for Biotin, J. Biol. Chem. **142:** 913 (Feb.) 1942.

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122. Woolley, D. W.: The Nature of the Antialopecia Factor, Science **92:** 384 (Oct. 25) 1940.

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128. Gavin, G., and McHenry, E. W.: Inositol: A Lipotropic Factor, J. Biol. Chem. **139:** 485 (May) 1941.

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rations which are now used for experimental purposes contain this level of inositol.

Little is known regarding the role of inositol in human nutrition. Perhaps the most interesting development is the report of Milhorat and Bartels [131] that inositol may improve the action of tocopherol in the treatment of progressive muscle dystrophy. These authors suggested that inositol forms a complex with tocopherol in the intestinal tract and that this complex is necessary for normal creatine metabolism.

PARA-AMINOBENZOIC ACID

Another factor which is often included in the B complex is para-aminobenzoic acid (fig. 9).

It was first recognized as an essential metabolite when Woods [132] discovered the antagonistic action between this compound and sulfanilamide and the consequent identification of para-aminobenzoic acid as a bacterial growth factor.[133] The relation of sulfonamide drugs and para-aminobenzoic acid has been reviewed by Welch.[134] The report by Ansbacher [135] that the graying of the fur observed in rats on certain synthetic rations could be cured by the administration of 3 mg. of para-aminobenzoic acid daily stimulated much interest in this compound as an animal factor. Numerous papers have appeared dealing with this compound as it affects hair color, growth and lactation in rats and other animals, but most of the results are conflicting. Briggs and his co-workers [136] observed a growth response on adding para-aminobenzoic acid to purified rations for chicks, but suggested that it acts indirectly by stimulating the production of unknown vitamins through intestinal synthesis. The possible role of para-aminobenzoic acid in the treatment of gray hair in human beings has been studied by Brandaleone and his associates,[137] who reported that in a group of 19 elderly persons with gray hair only 2 persons showed a significant color change during a period of intensive vitamin therapy. At present there appears to be no clearcut evidence that this metabolite must be supplied preformed in the diet of human beings. The contradictory results which have been obtained may be due to the fact that this compound is a constituent of the folic acid molecule.

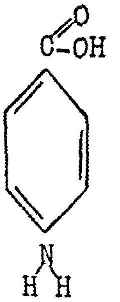

Fig. 9.—Structure of para-aminobenzoic acid.

The most striking observation regarding para-aminobenzoic acid is its chemotherapeutic effect on typhus [138] and Rocky Mountain spotted fever.[139]

FOLIC ACID

Chemically, folic acid is N-[4-{[2-amino-4-hydroxy-6-pteridyl)methyl]amino}benzoyl] glutamic acid, or pteroyl glutamic acid.[140] It is a yellow compound sparingly soluble in water and has the structure shown in figure 10. This molecule contains three different groups: the pteridine part, para-aminobenzoic acid and glutamic acid. The part consisting of the pteridine and para-aminobenzoic acid is called pteroic acid.

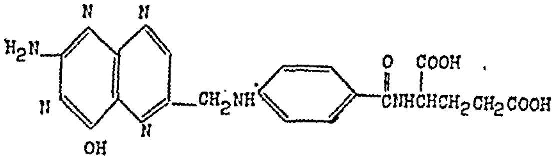

Fig. 10.—Structure of folic acid (pteroyl glutamic acid).

Folic acid is widely distributed in nature, both in free form and in compounds with added glutamic acid, such as pteroyl triglutamic acid (fermentation factor) and pteroyl heptaglutamate (vitamin B_c conjugate).[141]

In light of our present knowledge, it is apparent that folic acid deficiencies were observed over ten years ago in monkeys (Day and his co-workers [142]) and in chicks (Hogan and Parrott [143]). Greatest progress in the isolation of this vitamin was made when it was recognized that a growth factor was needed for the growth of Lactobacillus casei and related organisms [144] and that concentrates of this factor were active for growth and hemoglobin production in chicks fed purified rations.[145]

Most knowledge concerning the function of folic acid has come from studies on bacterial metabolism. Nimmo Smith and Woods [146] have shown that all organisms requiring para-aminobenzoic acid grow equally well when given folic acid, although the required molar concentration of folic acid was greater than that of para-aminobenzoic acid. Folic acid also acted as an antisulfonamide agent with these organisms, although the activity differed from that of para-aminobenzoic acid in that it was noncompetitive. Stokes [147] and Lampen and Jones [148] have suggested that folic acid functions as a prosthetic group in an enzyme concerned with the synthesis of thymine or related compounds.

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Today it is well established that synthetic folic acid is required for growth and blood formation in chicks,[149] monkeys[150] and fox and mink.[151] Rats do not require preformed folic acid in the diet until the synthesis of this compound by intestinal bacteria is reduced through the use of sulfonamide drugs.[152] Similarly, dogs grow and regenerate hemoglobin very well on diets devoid of folic acid, although a deficiency can be produced by allowing blacktongue to develop in the dog several times.[153] A folic acid deficiency has been produced in the pig[154] and in the mouse[155] by using an antagonist of folic acid. In most cases the three forms of folic acid show equivalent activity, although there is some evidence that the pteroyl heptaglutamic acid is not as active in the monkey as pteroyl glutamic acid.[150]

The human being is apparently similar to the rat and dog in that the requirement is satisfied by intestinal production except under disturbed conditions. Attempts to deplete volunteer subjects of their tissue reserves of folic acid by supplying diets adequate in other essential nutrients but low in folic acid have not been successful. In spite of this fact, the activity of synthetic folic acid in various types of macrocytic anemia in relapse has repeatedly been demonstrated. The activity of pteroyl glutamic acid was first demonstrated during the latter part of 1945 and the extensive clinical studies have been summarized by Spies and his co-workers,[156] Darby[157] and Cartwright.[158] Darby[157] has also described the effects of pteroyl glutamic acid on the gastrointestinal manifestations of sprue and related syndromes. Since commercial preparations of the classic pernicious anemia factor contain practically no folic acid[159] and since a pure substance, vitamin B_{12}, which is active in very small amounts in the treatment of pernicious anemia, has now been isolated,[160] it is clear that the effect of folic acid may not be direct or that its effect is closely related to additional factors. It is entirely possible that extensive use of vitamin B_{12} in the treatment of anemia in human beings will bring out conditions that will respond only to folic acid. Such a condition has been obtained in the dog on low protein-low niacin diets.[161]

It is difficult to suggest any figures for the folic acid requirement of human beings. Clinical responses have been obtained with 2 to 10 mg., but this intake must be considerably higher than the daily requirement. On the basis of the requirements for other animals, a figure of 0.1 to 0.2 mg. per day may be reasonable.

Microbiologic methods have been used almost exclusively for the estimation of the folic acid content of foods, although chick assays have been used for comparison. In fact, it was the discrepancy between the chick assay and the microbiologic assay which led to the isolation of the conjugate which has activity for the chick but not for bacteria.[162] In 1942 Cheldelin and Williams[163] reported the folic acid content of many foods, but at that time it was necessary to use a standard of assumed potency since the crystalline vitamin was not available. Cheldelin and his co-workers[164] found taka-diastase the most effective of several enzymes studied for the release of folic acid, but later work has shown that a water extract of fresh hog kidney, as described by Bird and his co-workers[165] gives higher results. Olson and his co-workers[166] have studied some of the difficulties encountered in the release of folic acid in liver homogenates. The results of a preliminary report[167] on the folic acid content of foods show liver and deep green leafy vegetables to be very high and green vegetables, cauliflower, kidney, muscle meat and wheat cereals to be high in folic acid values. Preliminary results also indicate that the loss of folic acid during cooking may be very high, although improved methods for the release of conjugated forms may alter the results somewhat. There is also considerable loss in vegetables during storage at room temperature.

COMMENT

So far, ten members of the B complex have been described and a pure compound has been associated with each vitamin. During the early studies on the additional factors required by the chick, Briggs and his co-workers[168] described two factors: one which showed greatest activity in the promotion of growth and one which was more active in stimulating feather production. On the basis of microbiologic assays, which did not include enzymatic treatment for the complete release of folic acid, both appeared to be different from the bacterial growth factor (folic acid), and they were designated B_{10} and B_{11}. When synthetic folic acid became available, an adequate amount added to synthetic rations produced excellent growth, feathering and hemoglobin production. Folic acid appears to replace the two factors, although part of the effect may be indirect. The exact relation of folic acid to vitamin B_{10} and vitamin B_{11} will have to await new technics.

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VITAMIN B_{12}

Rickes and his associates [168] have isolated from liver a crystalline compound which is highly active in patients with Addisonian pernicious anemia.[169] On the basis of the aforementioned terminology, this compound has been called vitamin B_{12}. This compound is also active for the growth of Lactobacillus lactis.[170] The availability of this compound for unrestricted experimental work will do much to establish the exact relation of folic acid to macrocytic anemias.

ADDITIONAL FACTORS

The existence of several additional factors is evident from studies with a number of different animal species. In the case of rats, it has been shown that liver and liver preparations will stimulate the rate of growth of these animals when they are maintained on a corn-soybean ration [171] or fed a basal ration with added thyroid.[172] Cary and his co-workers [173] have developed an assay for an unknown factor, called factor X, by prolonged extraction of the casein used in the ration and by depleting the young by feeding their mothers a diet deficient in factor X. Commercial liver extracts were observed to contain this factor. A growth response can be obtained in chicks fed a corn-soybean ration by adding fish products [174] or preparations from cow manure.[175] Chicks maintained on a similar ration also respond to the injection of very small quantities of liver concentrates rich in the pernicious anemia factor.[176] When dogs are placed on diets deficient in niacin and folic acid and containing a sulfonamide drug, the animals finally fail to respond to the addition of these two vitamins. Highly purified liver concentrates given intramuscularly are highly effective in producing growth and hematopoietic responses.[161] Whether the same factor is concerned in all these reactions and whether vitamin B_{12} will function in any of the conditions remains to be determined.

Recent studies show that in monkeys fed highly purified rations deficient in folic acid or riboflavin a type of anemia develops which responds only when fresh liver or raw milk is given.[23] In this case liver concentrates are inactive, which indicates that the factor is separate and distinct from those previously mentioned.[177] This factor may be related to one of the two factors observed to be needed by the fox and mink for normal growth and development.[178]

The availability of the several synthetic water-soluble vitamins has been of the greatest value in clinical practice and also for the fortification of certain foods, but the common foods still remain the best source of these vitamins in practical nutrition. Aside from the gustatory significance of properly prepared natural foods, the greatest value obtained from their consumption is that they supply the unknown factors along with the known. All the known water-soluble vitamins may be obtained from natural foods through proper selection. The selection is not an easy task even with the modern methods of food production and distribution. Some of the modern methods of processing increase rather than decrease the difficulties. Often more emphasis is placed on the mere use of natural foods than on the proper combination of these foods. The few values given in table 1 clearly indicate the fallacy of this emphasis. Different natural foods differ greatly in the amount of any given vitamin which they contain. Thus, apples contain 0.04 mg. and pork loin 1.0 mg. of thiamine in 100 Gm. Eggs supply 0.1 mg. and peanuts 16 mg. of nicotinic acid in 100 Gm. In addition, any one food may show large variations in the amount of the different B vitamins present. Thus, oatmeal contains 0.65 mg. of thiamine, but only 0.14 mg. of riboflavin, in 100 Gm., while liver contains 0.27 mg. of thiamine and 2.8 mg. of riboflavin in 100 Gm.

Table 2.—*Vitamin Content of a Few Commercial Concentrates*

Sample	Thiamine*	Riboflavin*	Niacin*	Vitamin B_6*	Pantothenic Acid*
A	5.0	3.0	20.0	0.5	3.0
B	1.0	1.0	0.15	0.03	0.2
C	2.5	2.5	20.0	0.5	...
D	1.0	0.1	....	...	...
E	1.5	2.0	20.0	0.2	1.0
F	0.6	0.1	....	...	...
G	1.5	2.0	....	...	...
H	1.5	1.0	....	...	...
I	1.0	0.33	5.0	...	...

* Values are given in milligrams per unit of product.

There has been an increasing interest in eliminating the effect of this variation by prescribing vitamin concentrates. In other words, a tablet or a capsule may supply the daily requirement of the vitamins, and any pleasing combination of foods may be consumed for the rest of the day. A survey conducted at the time the first "Handbook of Nutrition" was prepared showed that the concentrates varied to a much greater extent than do natural foods. A resurvey of typical concentrates on the market shows that this variation has decreased to a considerable extent, but one still finds products varying from 0.6 to 5 mg. of thiamine per unit of product. Niacin values vary from 0.15 to 20 mg. These products are useful in the treatment of specific deficiencies, but unless they are properly used they give no greater security than the proper combination of natural foods. Thus, one not only needs to identify all the essential vitamins, but one must give consideration to distribution of these factors in food and food preparations as well as to the daily requirements of human beings.

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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, NOVEMBER 27, 1948

NUTRITIONAL CONTRIBUTIONS OF WHEAT

The importance of wheat in the basic food economy of most nations of Western civilization has been obvious in recent years. Wheat and wheat flour have frequently played a strategic role in preventing or alleviating mass hunger and starvation in various parts of the world. Wheat flour is one of the least expensive sources of food. Its chief use continues to be for bread. No other single food item is so commonly used to supplement calories supplied by more expensive types of foods.

A 1 pound loaf of plain baker's bread provides about 1,200 calories; a pound of flour provides roughly 1,600 calories. In the proportions in which these food items are included in American dietaries, the slightly lower digestibilities of longer extraction types of flours and of bread made from these are of little practical importance. Half a standard loaf of bread (eight 1 ounce slices), with 1 level teaspoon or one-half an average-sized pat of butter or margarine per slice, provides approximately 900 calories.

Seventy-five to eighty-five per cent of the caloric value of flour is derived from starch. Starch also supplies 60 to 80 per cent of the caloric value of bread, depending on variations in the bread formula. The public, impressed by years of advertising of bread, flour and other grain products as "energy foods" and the association of starch with calories, is unaware that comparable weights or volumes of sugar or fats exceed the caloric values of starch, flour, bread and most other grain products. Our national diet has therefore greatly increased in both sugar and fat (butter excluded) content over the past fifty years, while consumption of flour and bread has declined.

All essential amino acids are represented in the proteins of wheat, flour and bread. The amino acids in these foods do not occur, however, in sufficient or in as well proportioned quantities, relative to human requirements, as in various other food proteins, particularly those of eggs, milk and meats.

The supplementary relationships of bread or flour to various food proteins of animal origin are an important economic factor often overlooked by physicians and nutritionists. Dietary protein derived in proportions of one half to two thirds from foods of plant origin is entirely adequate in quality to meet all protein needs for normal growth, development, reproduction and lactation. As foods of plant origin are usually cheaper than foods of animal origin, the economic benefits of such mixtures are obvious.

The commendable practice of adding 6 per cent dry milk solids to the baker's mix adds a small, but definite, quantity of supplementary animal protein. This practice also adds other important nutrients; namely, calcium and riboflavin. In animal-feeding experiments,[1] the feeding of bread containing 6 per cent nonfat milk solids resulted in improved growth-promoting and bone-calcifying values as well as increased hemoglobin production. Investigators found that "enriched white bread with skim milk solids is the equal of whole-wheat bread in the production of growth and in the production of blood hemoglobin and is distinctly superior to it in the production of bone calcification."

Half a standard loaf of baker's bread provides about 18 Gm. of protein or approximately 30 per cent of the usually recommended need for protein maintenance of normal human adults other than pregnant and lactating women.

The Council on Foods and Nutrition of the American Medical Association as early as 1939 recommended that iron and certain vitamins normally present in wheat but largely removed in the milling of white flour be restored to the flour. This recommendation was made because flour and bread were almost universally consumed by the populace and were especially prominent articles of diet among low income groups whose diets were most in need of improvement in protective food values. Also, many diets might be relatively low in one or more of the essential nutrients now included as enrichment ingredients of white flour and bread. Now approximately 75 to 80 per cent of all white flour and bread is being enriched with thiamine, riboflavin, nicotinic acid and iron according to standards promulgated for enrichment of these products under authority of the Food, Drug and Cosmetic Act. Twenty-three states and two territories to date have enacted laws requiring the enrichment of all family white flour and all baker's white bread. Full scale enrichment would result in an increase of 30 to 40 per cent in the apparent per capita consumption of these three B-vitamins and iron. The enrichment program is of great benefit to the American diet and is of greatest benefit to those whose consumption of bread is highest. These in general are the persons and families with moderate to low incomes.

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Apparent per capita consumption of flour in this country declined from about 210 pounds (about 95.2 Kg.) per annum forty years ago to about 155 to 157 pounds (70.3 to 71.2 Kg.) per annum in the years immediately preceding World War II. Consumption increased during the war years, at which time the level was undoubtedly affected by shortages of other foods.

The long and more or less persistent decline in per capita consumption of flour is believed by many to stem principally from three factors: (1) a small decline resulting from decreased expenditure of human energy associated with labor-saving devices and motorized travel, (2) a fairly widespread and gradually rising standard of living associated with the inclusion of higher proportions of certain more expensive foods largely of animal origin in place of breadstuffs and (3) a higher per capita consumption of sugars and sweets and of fats exclusive of butter. Preservation of health demands that the last-mentioned factor be carefully watched, since this trend may increase incidence of obesity and associated diseases. Proper use of foods such as flour and bread which carry important protective food substances must be preserved.

Current Comment

MORBIDITY AND MORTALITY STATISTICS OF DOMESTIC ANIMALS

Reliable morbidity and mortality statistics of domestic animals are unavailable. The veterinarian is required to report certain communicable diseases, but reporting is uncertain and enforcement difficult. The incidence of numerous other diseases is entirely unknown—diseases of great economic importance as well as diseases which may be transmitted to man. The United States Livestock Sanitary Association, the American Veterinary Medical Association and the Division of Biology and Agriculture of the National Research Council have interested themselves in the problem, with the hope that proper legislation may be enacted to correct the situation. The United States Bureau of Animal Industry is cognizant of the need but has neither the funds nor the personnel to initiate the program. The consensus seems to favor compulsory reporting to the office of the state livestock disease control official and thence to the United States Bureau of Animal Industry, with possibly the establishment of a new division of vital statistics.[1] Numerous problems must be solved before the project can be functionally effective. Manuals on nomenclature and on standard methods of diagnosis are in process of preparation but are not yet available. Experiments in the collection of morbidity and mortality data of farm animals have been made in a small way, and should be continued. The shortage of veterinary pathologists will require some years to remedy. The seriousness of the problem, however, from both the economic and the public health point of view, as well as the possible role that infectious diseases of animals might play in biologic warfare, calls for serious attention.

INTERNATIONAL TUBERCULOSIS PREVENTION

Under the sponsorship of the United Nations International Children's Emergency Fund and the Danish, Norwegian and Swedish Red Cross, a program for tuberculosis control on an international basis is being established.[1] The program which is to be carried out in war-ravaged countries of Europe envisages examination of 50,000,000 children and adolescents under 18 years of age. An estimated fifteen million of these children, the report states, will be found to need and will be given BCG vaccine. The bulk of the funds needed ($4,000,000) will be contributed by the United Nations International Emergency Children's Fund, and additional sums are expected from other cooperating organizations. The World Health Organization will provide technical advice and assistance. "Joint enterprise" agreements will be signed between the sponsors and the Ministry of Health of each participating country. Medical teams for actual work will be assembled in each country, composed of nationals and medical personnel supplied by the sponsoring agencies. Fresh vaccine and tuberculin will be supplied by the Danish State Serum Institute until each country is able to supply its own. Tuberculin intradermal or patch tests will be performed on all children, and positive reactors will be vaccinated with BCG. Presumably BCG has protective value for several years. Technical direction of the program is being entrusted to Danish, Norwegian and Swedish personnel because these countries have highly developed the technics of mass vaccination with BCG during the past twenty years ("The tuberculosis death rate in Denmark in 1947 was 30 per 100,000 inhabitants."[1]) Death rates in some of the countries to be included in the program are at least ten times the Danish rates. Joint enterprise agreements have already been signed in Finland, Hungary, Czechoslovakia, Poland and Yugoslavia. In Central Europe alone, as of July 1, 1948, more than 2,000,000 persons have been tested and over 600,000 vaccinated. China, Greece and Italy, as well as other countries of Asia and Western Europe, are being considered for extension of the program. The sponsors of this campaign, realizing that vaccination alone is not sufficient, consider other measures necessary for success to be expansion of public health services for detection of new cases of tuberculosis, furnishing of increased numbers of beds for isolation purposes and training of more adequate numbers of personnel. The program is truly international in that neither national borders nor political, racial nor religious discrimination will interfere with the extension of the program to the war-ravaged areas where greatest need exists.

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ORGANIZATION SECTION

Official Notes

COUNCIL ON MEDICAL SERVICE

Southeastern Regional Conference

The Southeastern Regional Conference on Medical Service for 1948 was held at the Columbia Hotel in Columbia, S. C., on October 12 and 13. The Conference met in 1946 and 1947 in Atlanta.

The meeting was opened with an address of welcome by Dr. R. B. Durham, president of the South Carolina Medical Association.

The Tuesday session was devoted to "Rural Medical Service." Mrs. Wilma B. Sledge, social and educational director for the Mississippi State Farm Bureau Federation, discussed "Rural Health Problems and Methods of Their Solution." She gave an interesting résumé of the problems in health of the rural population of Mississippi and of the steps which have been inaugurated and are now in progress toward meeting them. She emphasized the extent to which the shortages of hospital facilities, nurses' and physicians' services are inseparably related to one another and to the shortage of financial resources, in preventing the rendition of totally adequate service.

Dr. William R. Pretlow of Warrenton, Va., discussed the operation of medical and hospital prepayment plans in rural communities. One of the founders of Virginia Medical Service (the medical prepayment plan in Virginia) and now a member of its board of trustees, Dr. Pretlow, who practices in what he described as one of the most completely rural counties of Virginia, showed how the nonprofit prepayment plans, designed to make medical and hospital service more available to the lower income group, could be made to operate on a sound, satisfactory and practical basis in farming areas as well as in the urban centers of population.

Dr. R. V. Platou, head of the department of pediatrics in the Medical School of Tulane University, described the type of survey now being conducted by him and his associates at Tulane, throughout ten counties in southern Mississippi, to determine the extent of the availability of medical care and hospitalization, the existing need and, particularly, the points at which additional medical service and facilities for treatment are essential. Accompanying his remarks with a number of slides showing graphically the findings thus far, Dr. Platou indicated that in the opinion of those engaged in making the survey the matter of supplying the needs would follow more or less automatically once the survey is complete.

The theme of Wednesday morning's program was "Problems of Health in the Southeastern States," and its treatment approached by five speakers from as many different angles.

Dr. C. L. Guyton, head of the division of hospitals of the South Carolina Department of Health, now engaged in administering the program for hospital and health center construction under the terms of the Hill-Burton Act, described in detail what is being done in South Carolina. He pointed out many of the practical difficulties encountered and the minimum requirements that must be met in supplying treatment facilities, if the plan and purpose for which the federal and state funds were appropriated are to be accomplished.

Miss Katherine Edwards, now principal of the elementary schools of Greenville, S. C., spoke of the practical side of health problems among school children. From her own experience, Miss Edwards made it clear that a teacher alert to the reaction of her pupils can generally tell when all is not right with their health, and that the teacher should be encouraged to concentrate on detecting illness and lending her aid in the improvement of the child in this respect as well as in mental training. The chief emphasis of her discussion was on the fact that problems of this sort will have to be solved primarily by two groups, the teachers and the physicians. Both of these professional groups with background, point of view and occupation so directly related to the physical and social well-being of the people must recognize, she pointed out, and concentrate on discharging the responsibilities for which their training and professional status have fitted them.

Mr. W. Cicero Kendrick of Atlanta, a prominent leader in organized labor and an official of the Georgia State Federation of Labor, pointed out that labor as a group is just as vitally interested as any other in preserving the freedom and independence of the American way of life, and that employees recognize that their welfare depends on the welfare of the employer. This mental attitude, however, and that of other groups, do not alter the fact that many persons, he said, are without adequate medical care and hospital service, through circumstances beyond their immediate control. While he did not favor a system of state medicine such as has often been discussed, he expressed the belief that this might be the ultimate result unless some other solution is found. He called on the medical profession to furnish the leadership in finding such a solution and pledged the cooperation of labor and other lay groups in any movement reasonably calculated to relieve the situation.

Dr. John T. T. Hundley of Lynchburg, Va., presented the results of a survey conducted by him a few months ago, in determining what the lay public generally thinks of the adequacy of available medical care and the things which need most to be changed to improve it. Dr. Hundley, who is a practicing physician specializing in internal medicine, sent requests to a large number of people in various occupations and strata of society, requesting their estimate of doctors and the service rendered by them. Some of the replies he received were enlightening and highly interesting, if not always entirely complimentary. The attitude consistently expressed by the majority of those who replied was favorably inclined toward the medical profession.

Comments on the subject from the standpoint of a Washington observer were given by Dr. Joseph S. Lawrence, of the Washington office of the American Medical Association Council on Medical Service. Dr. Lawrence brought valuable observations regarding the probable future trends. He called attention to the numerous bills introduced in the last Congress, some of which were passed, affecting one phase or another of the subject of medical care for all people.

Dr. Walter B. Martin of Norfolk, Va., a member of the Board of Trustees of the American Medical Association, outlined the steps taken by the national organization within the past few years in its active program to preserve the free system of the practice of medicine. He stressed the Ten Point Program of the American Medical Association, adopted and now in process of execution. This, he believed, if properly activated and extended, should go far toward answering criticism leveled at the profession in the past, and remedy most of whatever defects exist in the system of medical service which has always been a part of democratic free American institutions.

After luncheon at 1 p. m., with members of the Conference guests of the South Carolina Medical Association, the discussion was resumed, the afternoon being devoted to general discussion, led by Mr. Thomas A. Hendricks of Chicago, Executive Secretary of the American Medical Association Council on Medical Service, and Dr. Fred C. Hubbard of North Carolina.

The two day meeting was attended by representatives of the medical associations of North Carolina, Virginia, Georgia, Florida, Tennessee, Louisiana and South Carolina. The total number registered was 53, and the general consensus seemed to be that the program arranged was successful in focusing the thought and presenting prepared discussions on those subjects of most vital interest to the profession, in its quest for an answer to the questions which have been so prominent in the minds of the public for one reason or another during the past few years. No formal action was determined upon and none was proposed by the Conference. The ideas expressed were for the further consideration of the delegates in their respective state groups and for approval wherever possible, according to the means most adaptable in each area.

The arrangements for the Conference were in charge of a committee composed of Dr. Julian P. Price, chairman; Dr. Walter B. Martin and Dr. H. B. Mulholland, dean of the University of Virginia Medical School, Charlottesville, and a member of the American Medical Association Council on Medical Service. Dr. Mulholland presided at the first day's session and Dr. Price presided on Wednesday. Mr. M. L. Meadors, director of public relations and counsel of the South Carolina Medical Association, and Henry S. Johnson, director of public relations and medical service of the Medical Society of Virginia, took part in the meeting.

Washington Letter

(From a Special Correspondent)

Nov. 22, 1948.

Report of Office of Civil Defense Planning

Medical and public health responsibilities of a home defense program for the United States are sharply defined in the blueprint for organization which has been submitted to Secretary of Defense James Forrestal by the Office of Civil Defense Planning. Its report recommends establishment by Congress of a permanent Office of Civil Defense and subsequent enactment by states and municipalities of supporting laws which would be required to integrate the system.

The director of the proposed Office of Civil Defense would report to the Secretary of Defense or directly to the President. In his 300 page printed report to Secretary Forrestal, Chairman Russell J. Hopley of the Office of Civil Defense Planning said the former is preferable. Four deputy directors are provided for: Plans and Operations, Medical and Health Services and Special Weapons Defense, Technical Services, Training. The medical deputy "should be an outstanding member of the medical profession, licensed to practice medicine and surgery, and have had broad medical and administrative experience."

Under his general supervision wuold be four broad divisions: medical and health services, radiologic defense, chemical defense and "other special weapons defense," the last-named division concerning itself with a subject which is still alluded to only inferentially in government documents — biologic warfare. Bureaus organized similarly would be set up by the several states, cities and metropolitan areas.

"In modern total warfare," says the Hopley report, "the civilian frequently is subjected to enemy attack to an extent comparable to that experienced by the soldier. An attacked civilian population demands the same treatment of casualties and the sick, and protection against communicable diseases that is required by the military forces. In crowded urban areas, deaths, disability and suffering resulting from enemy action can easily exceed any which has ever been experienced by armies. In such instances, unless there is adequate provision for the preservation of the health and lives of the civilian population, the consequent reduction in civilian manpower, working effectiveness and morale will so cripple our industries as to make defeat more than a possibility. There can be no satisfactory civil defense without adequate provision for medical and health defense."

Headed by a physician, the medical and health services division would have three branches: medical care, public health and administration. In peacetime, the branch chiefs might serve on a part time basis, except that administration would be a full time activity, staffed by the Army, during peace as well as war. The public health and medical care services branches are subdivided into specialty sections, the heads of which would serve as consultants in peacetime.

The chief of the radiologic defense division would hold a doctorate degree, preferably in medicine, and should be a career man in government service, says the report. This division would have a five member advisory committee. A medical and health advisory committee also is recommended, its members representing the following organizations: Red Cross, National Research Council, American Medical Association, American Dental Association, American Association of Industrial Physicians and Surgeons, American Public Health Association, Association of State and Territorial Health Officers, American Veterinary Medical Association, American Nurses Association, American Hospital Association, Catholic Hospital Association, American Protestant Hospital Association and the American Pharmaceutical Association.

In making the Hopley report public, Secretary Forrestal explained that he wished to stimulate general discussion of the issue even before details of the plan are approved by his and other government agencies. Mr. Hopley, in a letter accompanying transmittal of the report to state governors, said in part:

"While my own planning group is naturally convinced of the soundness of its recommendations, it is obvious that a report which concerns the entire civilian population and is of interest to so many governmental agencies must be subjected to the most careful scrutiny and review before it can finally be approved. . . . When all these comments have been received and considered, the report in its present form, or as modified as a result of such consideration, will be referred to the President for approval and subsequent submission to the Congress."

Dr. Perrin H. Long, professor of preventive medicine at Johns Hopkins University School of Medicine, served as medical advisor to the Office of Civil Defense Planning. Its consultant in radiologic defense was Dr. George M. Lyon, of Veterans Administration. Each was assisted by an advisory committee.

The report, whose 300 pages of text are supplemented by 17 organizational charts and proposed model legislation on federal, state and local levels, is purchasable ($1) from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

"Keto-Bemidone" Held Too Dangerous for Clinical Use

After investigation of the drug at the U. S. Public Health Service special hospital at Lexington, Ky., the Committee on Drug Addiction and Narcotics, National Research Council, has advised the Bureau of Narcotics and Food and Drug Administration that K-4710, "keto-bemidone" (4-[metahydroxypheny]-1-methyl-4-propionyl piperdine hydrochloride) has addictive properties too great to justify its distribution as an analgesic. The drug was submitted for assay last January by Winthrop-Stearns, Inc.

Coming Medical Meetings

American Medical Association Interim Session, St. Louis, Municipal Auditorium, Nov. 30-Dec. 3. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Annual Conference of State Secretaries and Editors, St. Louis, Hotel Statler, Nov. 28-29. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

National Medical Public Relations Conference, St. Louis, Hotel Statler, Nov. 27. Mr. Lawrence W. Rember, 535 N. Dearborn St., Chicago 10, Director.

American Academy of Allergy, Atlantic City, Chalfonte-Haddon Hall, Dec. 6-8. Dr. Theodore L. Squier, 425 E. Wisconsin Ave., Milwaukee 2, Secretary.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 5-9. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, Secretary.

American Society of Tropical Medicine, New Orleans, Roosevelt Hotel, Dec. 5-9. Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Maryland, Secretary.

Association for Research in Nervous and Mental Diseases, New York, Waldorf-Astoria Hotel, Dec. 10-11. Dr. Clarence C. Hare, 700 W. 168th St., New York 32, Secretary.

Eastern Section, American Federation for Clinical Research, Philadelphia, Temple University School of Medicine, Dec. 4 Dr. J. Edward Berk, Temple University School of Medicine, Philadelphia, Chairman.

Puerto Rico, Medical Association of, Santurce, Dec. 10-12. Dr. J. Basora Defillo, Box 3866, Santurce, Secretary.

Radiological Society of North America, San Francisco, Dec. 5-10. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, Dallas, Texas, Hotel Adolphus, Dec. 6-7. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 7-9. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, St. Louis, Dec. 2-4. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

SELECTIVE SERVICE SYSTEM

EDUCATIONAL ADVISORY COMMITTEE

The Director of Selective Service, Washington, D. C., issued on November 2 a memorandum to all local boards outlining the recommendations of the National Headquarters with respect to the deferment of preprofessional and professional students. This memorandum announced that the Director had established a Healing Arts Educational Advisory Committee, the purpose of which is to recommend means by which sufficient personnel may be trained in the healing arts, through the maintenance of an adequate flow of students through professional and preprofessional schools; to recommend procedures by which an adequate flow of students through the professional schools might be maintained to meet the nation's needs in trained medical, dental, veterinary and osteopathic personnel, and to advise the educators on problems arising through the operation of the Selective Service Act of 1948.

The Committee consists of Donald G. Anderson, M.D., representing the Council on Medical Education and Hospitals of the American Medical Association, Stockton Kimball, M.D., representing the Association of American Medical Colleges, G. D. Timmons, D.D.S., representing the Association of American Dental Schools, Dr. B. T. Simms, D.V.S., representing the American Veterinary Medical Association, and Otterbein Dressler, D.O., representing the American Osteopathic Association.

Students in Professional Schools: The Committee has advised the Director of Selective Service that the national interest will require graduates of medicine, dentistry, veterinary medicine and osteopathy annually in numbers equal at least to the present level. It recommends that students properly enrolled in the professional schools of these four professions and satisfactorily pursuing full time courses leading to graduation should be permitted to continue their studies until graduation.

Students in Preprofessional Schools: The Committee also recommends that sufficient numbers of preprofessional students be made available to maintain the freshman classes of these professional schools at present levels. To accomplish this the Committee recommends that these professional schools select provisionally for admission, on completion of the preprofessional course to the satisfaction of the professional school, certain students who have satisfactorily completed at least one year of the preprofessional course. These provisional admissions will continue valid until the following July 15 unless cancelled by the professional school.

The number of preprofessional students who are not otherwise deferable and who have completed at least one year of professional work and who may be selected, is, for the freshman class of 1949, 55 per cent of the 1948 freshman professional class; for the freshman class of 1950, 62½ per cent of the 1948 freshman professional class, and for the freshman class of 1951, 100 per cent of the 1948 freshman professional class.

These percentages of provisional admissions are to be reviewed by the Committee once each year, and recommendations as to the numbers will be adjusted for the ensuing classes in accordance with the demonstrated needs at that time.

Identification of Professional Students and Preprofessional Students Provisionally Accepted: To identify to local Selective Service Boards the professional students of medicine, dentistry, veterinary medicine and osteopathy, and the preprofessional students who have been provisionally admitted to the professional schools, the Committee has recommended that an authorized representative of the professional schools should submit, on a form designed for that purpose, (1) the names of professional students who are not otherwise deferrable under the Selective Service Act of 1948 and who have duly matriculated in their professional schools and are actually pursuing a course leading to graduation in one of the specified professions and (2) the names of preprofessional students who have completed at least one year of preprofessional study and have been provisionally accepted for entrance into the professional school on completion of a preprofessional course to the satisfaction of the professional school.

Certification of Preprofessional and Professional Students: The form to be used by the professional schools will be Certification of Preprofessional and Professional Students of Medicine, Dentistry, Veterinary Medicine and Osteopathy (SSS form no. 103). Such certificates will be issued to local boards through national headquarters and state headquarters for Selective Service, and will constitute evidence in support of the student's claim for occupational classification. Before issuing a certificate for a preprofessional student, the professional school should secure assurance from the student that he will not obtain a similar certificate from another professional school.

Failure to Pursue Course of Study Satisfactorily: When a student fails to pursue his course satisfactorily to the professional school, an authorized representative of the school will cancel the Certification of Preprofessional and Professional Students of Medicine, Dentistry, Veterinary Medicine and Osteopathy (SSS form no. 103) and will notify the local board of such cancellation, through national headquarters and state headquarters of Selective Service.

NAVY

COUNCIL ON RADIO-BIOLOGICAL RESEARCH

The Council on Radio-Biological Research of the Bureau of Medicine and Surgery recently held its first meeting at the Naval Medical Research Institute, Bethesda, Md. Captain R. H. Draeger, M.C., U.S.N., head of the Research Branch, Atomic Defense Division, Bureau of Medicine and Surgery, acted as chairman. Representatives from the Office of the Surgeon General of the Army, the Armed Forces Special Weapons Project, U. S. Atomic Energy Commission, Naval Radiologic Defense Laboratory, Office of Naval Research and Naval Medical Research Institute were present. The function of this council is to review all proposed research projects in the fields of radiation biology, diagnosis and therapy of radiation illness, internal radiation hazards and methods of photographic dosimetry and personnel decontamination; to assign equitable priority to such projects, and to recommend such projects to the proper laboratory for investigation.

TRAINING IN CIVILIAN INSTITUTIONS

The following lieutenants (jg) of the Medical Corps Reserve have been ordered to active duty at civilian medical institutions as interns under the Medical Training Program: William C. Adams Jr., of Boise, Idaho, to St. Johns Hospital, Santa Monica, Calif.; Frederick Brockmeier of Glendale, Ohio, to Christ Hospital, Cincinnati; William B. Buckingham of Oak Park, Ill., to Cook County Hospital, Chicago; John L. Falls of River Forest, Ill., to Cook County Hospital, Chicago; Richard R. Grayson of Maywood, Ill., to Cook County Hospital, Chicago; Rice T. King of Jacksonville, Fla., to Baltimore City Hospitals, Baltimore; William H. Kittrell of Mt. Pleasant, Tenn., to Philadelphia General Hospital, Philadelphia; Martin H. Klein of Fountain City, Wis., to City Hospital of Akron, Akron, Ohio; Robert S. Meador of Leonard, Texas, to Scott and White Hospital, Temple, Texas; Hale B. Soyster Jr., of Los Angeles, to Los Angeles County General Hospital; Harold E. K. Sweeny of Elizabeth, N. J., to Wesley Memorial Hospital, Chicago;

Edward E. Tennant of Cleveland to Christ Hospital, Cincinnati; John F. Westfall of Glendale, Ariz., to Gallinger Municipal Hospital, Washington, D. C.; Jack S. Woodruff of Columbus, Ohio, to Indianapolis City Hospital, Indianapolis, and Belton J. Workman Jr., of Woodruff, S. C., to Roper Hospital, Charleston, S. C.

NAVAL OFFICERS AWARDED MEDAL AND PRIZE

The Association of Military Surgeons of the United States recently announced that two officers of the Naval Medical Research Institute, Bethesda, Md., had been awarded the Sir Henry Wellcome Medal and Prize. The recipients are Lieut. Comdr. Eugene P. Cronkite, M.C., U.S.N., and Lieut. (jg) William H. Chapman, M.S.C., U.S.N. Their paper, "A Critical Analysis of the Syndrome of Acute Total Body Radiation Illness," was selected by the association as the best submitted in the annual competition. The honorarium and scroll accompanying the award were presented by Brig. Gen. Edgar Erskine Hume, U.S.A., president of the association, November 12 at the annual convention in San Antonio, Texas. Dr. Cronkite is head of the Hematology Facility, Naval Medical Research Institute, and Lieutenant Chapman is a member of the staff.

CLINICAL PSYCHOLOGISTS WANTED FOR REGULAR CORPS

Applications are desired from Naval Reserve officers who hold the Ph.D. in psychology, or have completed all course work for this degree, for transfer to the regular navy, medical service corps (clinical psychology). Officers who are accepted for appointment will be assigned to clinical psychology billets, neuropsychiatry service in continental Naval hospitals, Naval and Marine training centers, retraining commands, and disciplinary barracks. Previous military experience in psychology is not a requisite; however, preference will be given to reserve officers who filled psychologic billets during World War II. Applications should be initiated through the Naval districts in which the applicant resides; however, more detailed information can be secured from the Navy Department, Bureau of Medicine and Surgery, Attention: Professional Division, Washington, D. C.

RETIRED OFFICERS REQUEST ACTIVE DUTY

The following retired medical officers have requested recall to active duty: Capt. Harold A. Noreen, Minneapolis, to 9th Naval District as assistant to the district medical officer in connection with the Medical Reserve Program; Comdr. Norman J. Haverly, Long Beach, Calif., to the Office of Naval Office Procurement, Los Angeles, and Comdr. Esdras J. Lanois, Cleveland, to the Administrative Command, Naval Training Center, San Diego, Calif., for duty in the Medical Department.

NEW NAVY INTERNS

The Bureau of Medicine and Surgery announced October 27 that thirty-two additional lieutenants (jg) in the Medical Corps Reserve have reported for their first active duty in internships at various civilian medical institutions under the Navy Medical Training Program. These officers will serve on active duty in the Navy after completion of their internships.

AWARDS AND COMMENDATIONS

Lieutenant Arlington Bensel Jr.

Lieutenant Arlington Bensel Jr., U.S.N.R., of East Orange, N. J., has been authorized by the Navy Department to wear the Presidential Unit Citation ribbon with star by virtue of his service with the First Marine Division, which was cited by the President of the United States "for extraordinary heroism in action against enemy Japanese forces at Peleliu and Ngesebus from Sept. 15 to 29, 1944."

PERSONALS

Lieutenant (jg) Frank R. Johnson of LaGrange, Ill., has accepted appointment in the Regular Navy Medical Corps and has been nominated for duty under instruction in a residency in surgery at the Presbyterian Hospital, Chicago.

Lieut. (jg) Harry C. Alfred of St. Joseph, Mo., will report for his first active duty in the Medical Corps Reserve at the Naval Hospital, Memphis, Tenn.

Lieutenant (jg) Nathaniel M. Cohen Jr., Brookline, Mass., has transferred from the active reserve to the regular navy.

VETERANS ADMINISTRATION

DOCTORS NEEDED IN TUBERCULOSIS HOSPITALS

One hundred full time doctors are needed by Veterans Administration for duty in its tuberculosis hospitals. Applicants should address their inquiries to the Chief Medical Director, Veterans Administration, Washington 25, D. C. The openings are scattered throughout the nation among Veterans Administration hospitals specializing in the treatment of tuberculous veterans and in Veterans Administration general hospitals operating tuberculosis departments.

The salary scale for full time doctors in the Veterans Administration's Department of Medicine and Surgery ranges between $4,479 and $10,305 annually for jobs now open. During the past year, 18,222 tuberculous veterans were admitted to Veterans Administration hospitals for treatment. Discharges during the same period totaled 18,071.

SITE FOR NEW HOSPITAL AT CLEVELAND

The Administrator of Veterans Affairs, Carl R. Gray Jr., has authorized the acquisition of twenty acres of land at Cleveland for a 1,000 bed veterans general hospital. The tract, which is less than a mile from the Western Reserve University Medical School, now has on it fifteen mansion type dwellings, some of which will be used as auxiliary hospital buildings. The City Council, it is said, will vacate the portion of Magnolia Drive lying within the perimeter of this tract and relocate all utilities lying in the bed of the street.

PERSONALS

Dr. Edward S. Post has become manager of the Veterans Hospital at Battle Creek, Mich., succeeding Dr. Roger P. Hentz.

Dr. William S. Schwartz of Portsmouth, Ohio, has become chief of professional services at the Veterans Administration hospital units at Oteen and Swannanoa, N. C. Dr. Schwartz formerly was chief of tuberculosis services at the veterans hospital at Brecksville, Ohio.

Dr. Arthur J. Klippen, chief medical officer at the Saginaw, Mich., subregional district office of the Veterans Administration, has been appointed chief of professional service with offices in Detroit. Dr. Klippen resigned as secretary of the Saginaw County Medical Society on acceptance of his new post and will move to Detroit. He was a lieutenant colonel in the Army Medical Corps during the recent war.

E. Burns Geiger, formerly of Hagerstown, Md., has been appointed chief of the Pharmacy Division of the Veterans Administration Department of Medicine and Surgery. Mr. Geiger served in the Navy during the war and later became assistant to the chief of the Division of Pharmacy.

HOSPITAL NEWS

The Veterans Administrations announces that the contract for the construction of a 131 bed addition to the Veterans Administration hospital at Brecksville, Ohio, has been awarded for $937,000.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ARKANSAS

Dr. Roberts Resigns as Dean.—Dr. Joseph T. Roberts, University of Arkansas School of Medicine, Little Rock, has resigned as dean and head of the department of medicine. Dr. William C. Langston, assistant dean and professor of anatomy, has been named acting dean. Dr. Langston, a graduate of the State University of Iowa College of Medicine, Iowa City, 1929, has been on the faculty of the school since 1930.

Narcotic Violation.—According to the Bureau of Narcotics, Dr. James H. Cole, Morrilton, pleaded guilty in the U. S. District Court at Little Rock August 30 to a charge of violating the federal narcotic code, and on that date was sentenced to serve a term of five years and thereafter will be placed on probation for a like period, with the provision that he should not practice medicine in any form.

CALIFORNIA

Society News.—Dr. Paul H. Pernworth, Compton, addressed the Southeastern Branch of the Los Angeles County Medical Association, November 3, on "Therapeutic Applications of Regional Anesthesia." The Los Angeles Obstetrical and Gynecological Society elected Drs. L. Grant Baldwin, president, and Gordon Rosenblum, secretary-treasurer, for the coming year.

Dr. Starr Appointed Acting Chairman of Department.—Dr. M. Paul Starr, clinical professor of medicine of the graduate division of the University of Southern California School of Medicine, Los Angeles, has been appointed professor and acting chairman of the department of medicine. Dr. Starr came to the university in 1945 after serving in the Army Medical Corps. He is a graduate of Rush Medical College, 1922, and beginning in 1924 he served on the staff of Northwestern University School of Medicine.

COLORADO

Courses for General Practitioners.—A course for general practitioners in Colorado and neighboring states will be conducted at the University of Colorado Medical Center, Denver, between December 13 and 17, through the joint sponsorship of the Colorado State Medical Society and the University of Colorado School of Medicine. This course is planned to give general practitioners instruction in recent developments in the diagnosis and treatment of diseases involving the cardiovascular and gastrointestinal systems, as well as disorders connected with endocrines, metabolism, the hemopoietic system and the chest. Fifty per cent of the time will be given to free discussion and presentation of questions by the participants. The course is open to licensed physicians in the Rocky Mountain region in general who are members of their respective state medical societies. A registration fee is required of all applicants. The tuition is $20. Interns and residents are invited to register and take part in the course without charge. Director of the course is Dr. Robert S. Liggett, professor of medicine.

A course in anesthesiology for general practitioners will be given at the Medical Center, January 12-15, 1949, sponsored by the Colorado State Medical Society, the Colorado State Society of Anesthesiologists, the University of Colorado School of Medicine and the Denver Society of Anesthesiologists. Except for interns, eligibility and fees are the same as for the course in general medicine. The director of the course is Dr. Philip A. Lief, associate professor of anesthesiology. For information, write the Director of Graduate and Postgraduate Medical Education, University of Colorado Medical Center, Denver.

CONNECTICUT

Professor Watkins Dies.—Professor John H. Watkins, Ph.D., associate professor of public health at Yale University and associated with the university since 1928, died in New Haven September 25, aged 47.

Personals.—Dr. Adrian C. Moulyn of the Yale Plan Clinic at New Haven has been appointed staff psychiatrist of the new clinic for the care and treatment of alcoholic addicts at Stamford, Conn. Dr. Moulyn is a graduate of the medical school of the University of Utrecht, Holland, in 1930. He has been an instructor in psychiatry and mental hygiene at Yale University School of Medicine.——Dr. Francis L. Lundborg, West Hartford, was appointed medical director at Trinity College succeeding Dr. Horace C. Swan, Hartford, who retired in June. Dr. Lundborg, a graduate of Yale Medical School, New Haven, 1930, formerly assisted Dr. Swan in the health program for Trinity students.

Yale Library Opens to State Physicians.—Medical reference material formerly limited to Yale medical students and faculty has been made available to Connecticut physicians through the recent creation of the Associates of the Yale Medical Library. More than one hundred and sixty physicians have become associates since the group's inception two months ago. Invitations to membership are being sent to Connecticut doctors and Yale medical alumni throughout the nation. The associates are granted borrowing privileges of the library and will receive its bulletins including accession lists and notices of important meetings. To expand further the facilities and services of the library the associates will pay a small annual subscription fee and are urged to contribute books and other material that will enhance the library. Officers of the associates are Dr. Herbert Thoms, chairman, Dr. Levin L. Waters, secretary, Laurence G. Tighe, treasurer, all of New Haven, and Dr. George Blumer, San Marino, Calif., former dean of the school of medicine, honorary chairman.

Silver Hill Foundation Medical Council Meeting.—At the annual meeting of the Silver Hill Foundation Medical Council in New Canaan in October, the subject for discussion was "What is the Ideal Method of Treating the Psychoneuroses, Psychosomatic Illnesses and Psychosocial Disorders?" Speakers were Drs. Harold L. Amoss, Greenwich; Arlie V. Bock, Boston; Walter O. Klingman, Charlottesville, N. C.; Fredrick C. Redlich, New Haven, and Edwin G. Zabriskie, New York. The Silver Hill Foundation is a psychotherapeutic unit devoted to the study, care and treatment of the psychoneuroses where patients are given brief, intensive psychotherapeutic and physiologic aid. The medical staff is composed of internists who, although they are specialists certified by the American Board of Psychiatry and Neurology, are interested in the eclectic approach to the treatment of the psychoneuroses rather than adhering to any one formal school of psychiatry. The medical director of the foundation is Dr. William B. Terhune of New Canaan and New York. Members of the council are outstanding physicians from various sections of the country.

DISTRICT OF COLUMBIA

Borden Lectures Revived.—Dr. John McMichael, professor of medicine at the University of London, delivered the William C. Borden Lecture November 15 at George Washington University School of Medicine. Dr. McMichael's address, "Some Peripheral Vascular Reactions of Surgical Interest," revived the Borden lectures, which were discontinued during the war. The lectures are made possible by a fund established by the Borden family in memory of the late Dr. William C. Borden, formerly dean of the medical school. Dr. McMichael has recently returned from a lecture tour of the United States and Canada. In addition to being professor of medicine at the University of London, Dr. McMichael is professor of medicine at the British Post-Graduate Medical School and chief of medicine at the Hammersmith Hospital in London.

ILLINOIS

Lecture on Atomic Injuries.—The Peoria County Medical Society in conjunction with the 203d Medical Battalion, Illinois National Guard, will have a dinner and lecture December 7 in the Pere Marquette Hotel, Peoria, at 8 p. m. Lieut. Col. John R. Hall Jr., U. S. Army Medical Corps, and former X Corps Surgeon in Japan, will speak on "Treatment of Atomic Bomb Injuries." All physicians and medical officers of the guard are invited.

Tuberculosis Mortality at Record Low.—The Illinois State Department of Public Health reports that mortality from tuberculosis in the state in 1947 was lower than in any previous year of record. The death rate of 33.6 per 100,000 population was about 9 per cent below that for 1946. During the past two decades mortality reports show that tuberculosis has declined by more than 50 per cent. In 1927 the rate was 74.9, and in 1937 it had dropped to 44.2 per 100,000 population. The State Department of Public Health has placed in operation seven mobile x-ray units, through which service more than 250,000 persons received roentgen examinations of their chests in 1947. Many additional units are also being operated in the state by local official and voluntary health agencies. To provide additional facilities for the care of tuberculosis patients, the state has developed plans and appropriated funds for the construction of two new sanatoriums: one of 100 bed capacity to be located at Mt. Vernon and another of 500 bed capacity to be located in Chicago.

Chicago

Dr. Cannon Receives Awards.—Dr. Paul R. Cannon, professor and head of the department of pathology at the University of Chicago, recently received two awards, the William Wood Gerhard Gold Medal of the Pathological Society of Philadelphia for outstanding work in medical research and the Ward Burdick Award-Medal of the American Society of Clinical Pathologists for outstanding contributions to pathology. Dr. Cannon received his medical degree in 1925 from the Rush Medical College.

Society News.—At the meeting of the North Side Branch of the Chicago Medical Society at the Drake Hotel December 2, Dr. Mayo H. Soley, dean and research professor in clinical medicine, State University of Iowa College of Medicine, Iowa City, will speak on "Present Status of Radioactive Iodine in Treatment of Toxic Goiter." The second address will be given by Dr. Paul S. Rhoads of Northwestern University Medical School, on "Inhalation of Penicillin Dust: Its Role in Respiratory Diseases."

Tons of Dust Per Square Mile.—During September Chicago air contained less dust than during any other month since the city began recording dust fall in 1926, according to the city's smoke inspector. The average dust fall was 34.65 tons per square mile, compared with the previous low of 36.5 tons in December 1940. The average was 51.53 tons in September 1947 and 41.1 tons in August 1948. The average soot fall in September was 9.26 tons, compared with 7.56 in August. The decline in dust fall is attributed in part to the campaign to curtail railroad and factory smoke.

Drs. Ivy and Youmans Cited for Wartime Service.—Dr. Andrew C. Ivy, vice president of the University of Illinois, received the president's certificate of merit, and Dr. John B. Youmans, dean of the college of medicine, the Army and Navy certificate of merit, November 6. The certificates are given in recognition for the wartime services of distinguished scientists and engineers of the Office of Scientific Research and Development. Major General John F. Lucas, deputy commander of the Fifth Army, and Captain Phillip G. Stokes, commandant of the Naval R.O.T.C. at the University of Illinois, presented the certificates.

Research Grants to Illinois.—The University of Illinois College of Medicine has been awarded the following grants for research: Office of the Surgeon General, Department of the Army, has awarded a $10,000 grant for the "Pharmacodynamic Study of Renal Blood Flow," to be conducted by the department of pharmacology, under the supervision of Dr. Jules H. Last. The U. S. Public Health Service has awarded the college of medicine separate grants of $6,000 and $5,500 for visual education depicting clinical manifestations of uterine carcinoma to be undertaken under the supervision of Dr. Frederick H. Falls in the department of obstetrics and gynecology, and for a study of the physiologic effects of the influenza virus on the mammalian host to be conducted under the supervision of Dr. John E. Kempf in the department of bacteriology. A $5,000 grant has been received from Parke, Davis and Company for the development and evaluation of antihistamine and adrenergic blocking agents under the supervision of Earl R. Loew, Ph.D., in the department of pharmacology. A research project on "urogastrone" will be conducted by the department of clinical science through a grant of $3,960 from Ayerst, McKinnon and Harrison, Ltd., under the supervision of Dr. Morton I. Grossman.

KENTUCKY

Hospital News.—Work on the Our Lady of Peace Hospital in Louisville, which is expected to cost more than $2,000,000, was begun in September. It is the first of fifteen projects approved for Kentucky under the federal hospital survey and construction program. The hospital will be operated by the Sisters of Charity of Nazareth.

LOUISIANA

Establish Musser Lectureship.—The Tulane University of Louisiana School of Medicine, New Orleans, will annually sponsor a series of lectures at the university in honor of the late Dr. John H. Musser, who served for more than twenty years as professor of medicine. The first lecture was held November 12, when Dr. John McMichael of the Postgraduate Medical School of London, England, spoke on "The Principle of Venous Pressure Reduction in the Treatment of Congestive Heart Failure." The university plans to hold lectures twice a year, bringing to New Orleans international figures in medical science.

MICHIGAN

Study of Venereal Disease Control.—A new research study in case finding in venereal disease control is being conducted under the joint sponsorship of the Michigan Department of Health and the U. S. Public Health Service, with the cooperation of the local health departments of the state. The object is to find out what is wrong with the current methods of case finding. The study is set up so that within twenty-four hours after a patient with venereal disease has been interviewed at the Michigan Rapid Treatment Center at Ann Arbor or the Social Hygiene Clinic, Detroit, investigations of the contacts can begin. Research began November 1 and will continue until June 30, 1949.

MISSOURI

Personal.—Dr. Edward H. Dunn, St. Louis, now a resident physician at the Veterans Administration Hospital, Jefferson Barracks, has been appointed for missionary service in Fort Yukon, Alaska, where he will be in charge of the Hudson Stuck Memorial Hospital. Dr. Dunn is a graduate of the Washington University School of Medicine, St. Louis, 1943, and served in the Medical Corps from 1944 to 1946.

Public Health Scholarship Fund.—A drive for funds to establish a public health scholarship in honor of Dr. Joseph F. Bredeck is being organized by friends and associates of the late St. Louis health commissioner. Dr. Joseph C. Peden, Missouri Theater Building, St. Louis, who has agreed to head the committee to direct the fund raising, said that the proposed scholarship would be used to train qualified youths in public health administration. Dr. Bredeck died October 4.

NEW YORK

Seminar in Urology.—The American Urological Association through the northeastern section of the country will conduct an intensive postgraduate course in urology Jan. 3-8, 1949 under the auspices of the University of Buffalo School of Medicine. The anatomy, physiology, bacteriology, biochemistry and pathology of the urinary tract will be covered by teachers and clinicians from various clinics throughout the country. For information, write Dr. George E. Slotkin, Chairman, Medical Center Building, 333 Linwood Avenue, Buffalo 9, N. Y.

Roentgen Program in Hospitals.—In upstate New York there are one hundred and sixty-five general, nonprofit hospitals eligible to participate in the State Department of Health program of routine chest roentgen examination of persons admitted. Hospitals with 4,000 admissions or over are eligible to receive the loan of photoroentgen equipment and are paid 50 cents for the report of each admission roentgen examination. Hospitals of less than 4,000 admissions annually use their own equipment and receive $1 for each report. There were twenty-three hospitals participating in the program October 1; fifteen have annual admissions of 4,000 or more each, totaling 128,946 admissions, and eight have less than 4,000 annual admissions, each totaling 17,310 admissions. Applications have been approved and equipment purchased for loan to another sixteen eligible hospitals, and eight others are in the process of being approved. Of one hundred and sixty-five eligible general hospitals in upstate New York forty-seven are participating, are awaiting equipment or have made application.

New York City

Brickner Lecture on Cancer.—The fifteenth Walter M. Brickner Lecture will be given at the Hospital for Joint Diseases by Dr. Peyton Rous of the Rockefeller Institute for Medical Research December 9 at 8:30 p. m., on "Cancer as Accident."

Dr. Gerard to Give Gregory Lecture.—Dr. Ralph W. Gerard, professor of physiology, University of Chicago Medical School, will speak on "Physiology and Psychiatry" in the annual Monas S. Gregory lecture to be sponsored by New York University College of Medicine November 8 at 4 p. m. in the amphitheater of the Psychiatric Division of Bellevue Hospital.

Dr. Sheehan Appointed Scientific Director.—Dr. Donal Sheehan, formerly director of the Commonwealth Fund, has been appointed chairman of the Scientific Committee, New York University-Bellevue Medical Center, and professor and chairman of the department of anatomy at the New York University College of Medicine. He will direct the over-all program of teaching and research to be carried out at the center. Dr. Sheehan was a member of the faculty for ten years before assuming the directorship of the Commonwealth Fund a year ago. From September 1937 to October 1947 he was professor and chairman of the department of anatomy. He was one of the principal authors of the survey report in which was first outlined the plans for the medical center.

Laboratory of Nuclear Studies.—A $2,000,000 laboratory of nuclear studies was dedicated October 7 at Cornell University. It consists of the main building and a structure housing a 300-Mev synchrotron. There will be a staff of 18 faculty members, 24 other full time staff members, 11 graduate research assistants, and 6 part time or temporary technicians under the direction of Robert R. Wilson, Ph.D. The laboratory of nuclear studies was established in 1946 with Robert F. Bacher, Ph.D., as director. Dr. Wilson succeeded Dr. Bacher when the latter was appointed a member of the Atomic Energy Commission.

Schoenberg Lecture on Glaucoma.—Dr. John N. Evans of Brooklyn will deliver the Mark J. Schoenberg Memorial Lecture on "Circulatory Aspects of the Glaucoma Problem" at the New York Academy of Medicine, December 6 at 8 p. m., under the joint sponsorship of the New York Society for Clinical Ophthalmology and the National Society for the Prevention of Blindness. The lectureship was established as a memorial to Dr. Schoenberg's interest and original work in the control of glaucoma. The lecture will be preceded by an illustrated talk on "Observations on the Anterior Chamber Angle with the Gonioprism" by Dr. Harvey E. Thorpe of Pittsburgh.

Personals.—Dr. Robert Gutierrez recently returned from a lecture trip to South America, where he conducted operative clinics in the capitals of several countries. Dr. Gutierrez was made honorary member of the urological associations of Colombia, Peru, Chile, Argentina, Uruguay, Brazil and the Venezuelan Surgical Association, the Peruvian Academy of Surgery and the Brazilian College of Surgeons.——Dr. Sidney M. Samis has been appointed assistant director of Mount Sinai Hospital. Dr. Samis, who was a medical corps captain during the war, has served in administrative posts at Montefiore Hospital for Chronic Diseases and the Union Health Center in New York. He is a graduate of St. Louis (Mo.) University Medical School, 1941.——Dr. William Dock, professor of medicine at the Long Island College of Medicine, served as physician in chief pro tempore at the Peter Bent Brigham Hospital, Boston, October 25-30. While there he delivered the E. Stanley Emery Jr. Memorial Lecture on "Peptic Ulcer and Periodic Visceral Pain."

OHIO

Physicians' Fund Aids Medical School.—The Society of General Physicians of Cincinnati established a fund in 1947 for the purpose of making small funds available for the benefit of the University of Cincinnati College of Medicine. The fund is made up of 75 per cent of net proceeds of the postgraduate program of the society. In the past year the following disbursements were made by the dean, who administers the fund: $1,200 for a teaching fellow in the department of obstetrics; $400 for a precision balance for the gastric laboratory and $1,200 to the cardiac laboratory.

Campaign Against Brucellosis.—The Ohio State Medical Association and the State Veterinary Medical Association have initiated a joint campaign to warn farm people of the dangers of brucellosis. The committee on rural health of the state medical association has published a folder which relates the symptoms of brucellosis in man, its menace to human health and steps to be taken to protect the farm family. A companion folder, which gives the latest known facts of diseases among farm animals, is being published by the state veterinary medical association committee on brucellosis. Both folders are to be distributed to farm organizations and county health officials.

TEXAS

Lecture in Neurology.—Dr. Francis C. Grant, professor of neurosurgery, University of Pennsylvania School of Medicine, Philadelphia, will give the James Greenwood Lecture in neurology and neurosurgery at the University of Texas Medical Branch, Galveston, December 6.

University Appointment.—Wiktor W. Nowinski, Ph.D., who has been doing research on enzyme factors in brain metabolism at the University of Texas Medical Branch, Galveston, has been appointed associate professor of neurochemistry.

Sweeney Diabetic Foundation.—This foundation has launched a campaign to raise $100,000 for establishment of a camp for diabetic children and a research laboratory for diabetic and allied research. The camp is to be on 400 acres of land near Gainesville, and the laboratory is to be located in Gainesville. The foundation was organized a year ago by the citizens of Gainesville and named for Dr. J. Shirley Sweeney, who was persuaded to become director of the enterprise. The project has been endorsed by the Cooke County Medical Society.

WASHINGTON

State Medical Election.—At the annual meeting of the Washington State Medical Association in October, Dr. Harold E. Nichols, Seattle, was installed as president. Dr. Donald G. Corbett, Spokane, was chosen president-elect and Dr. James W. Haviland, Seattle, secretary-treasurer. Drs. Ross D. Wright, Tacoma, and Raymond L. Zech, Seattle, were named delegates to the American Medical Association, with Drs. Frank H. Douglass and Vernon W. Spickard, both of Seattle, named as alternates. The next annual convention will be held in Seattle.

GENERAL

Panamerican Convention on Medical Education Postponed.—The secretary of the Panamerican Convention on Medical Education, which was to meet in Lima, Peru, December 3-13, announces that the meeting has been postponed until next year, probably some time in February.

Award to Designer of Lenses.—David S. Grey, Boston designer for lenses for television and receiving sets and microscopes for medical research, received the Adolph Lomb Medal of 1948 at the recent annual meeting of the Optical Society of America in Detroit. As part of his work he has designed new types of microscopic lenses for accurate photography of medical specimens in invisible ultraviolet light.

Tropical Medicine Society Meetings.—The National Malaria Society will meet conjointly with the American Society of Tropical Medicine and the American Society of Parasitologists at the Hotel Roosevelt, New Orleans, December 5-8. The National Malaria Society has scheduled four scientific sessions including a panel discussion on malaria and a joint meeting with the American Society of Parasitologists and the American Society of Tropical Medicine.

Society Election.—At the summer meeting of the American Proctologic Society, the following officers were elected: Harry E. Bacon, Philadelphia, president; Vernon G. Jeurink, Denver, president-elect; Hoyt R. Allen, Little Rock, treasurer, and W. Wendell Green, Toledo, secretary. Since Dr. Jeurink's death July 6, the council has chosen Dr. Louis E. Moon, Omaha, as president-elect.

Conference on Electronic Instrumentation.—A three day conference on the use of electronic instrumentation in the fields of nucleonics and medicine will be held in the Engineering Societies Building, New York, November 29 to December 1, under the auspices of the Institute of Electrical Engineers and the Institute of Radio Engineers. Addresses of the first day will place emphasis on the medical requirements of electronic instruments. A large display of nuclear radiation instruments has been provided by the Atomic Energy Commission.

Impostor Apprehended.—The impostor who was posing as a representative of the American Medical Association for the purpose of inspecting hospital laboratories (The Journal, October 23, page 602) was apprehended by military police at Fort Hamilton, Brooklyn, early in October and was released to civilian authorities. "Dr. Rumrick" appeared at the Station Hospital, Fort Hamilton. The commanding officer at the hospital, having previously received a telegraphic warning which was sent to U. S. Army hospitals in the New York area, notified the military police. The impostor has pleaded guilty.

Societies Appoint Executive Secretaries.—William C. Stronach has been appointed executive secretary of the American College of Radiology, which has headquarters in the Civic Opera Building, Chicago, to succeed Mac F. Cahal, who has become executive secretary of the American Academy of General Practice. Mr. Stronach was formerly Mr. Cahal's assistant. Mr. Cahal has been retained as consultant to the American College of Radiology with the title of general counsel. Headquarters of the American Academy of General Practice are located at 231 West 47th Street, Kansas City, Mo.

Dr. Cowgill Receives Nutrition Award.—George R. Cowgill, Ph.D., professor of nutrition at Yale University, received the 1948 Award for Scientific Distinction of the Grocery Manufacturers of America, November 15. The presentation took place during a luncheon at the organization's annual meeting in the Waldorf-Astoria Hotel, New York. Dr. Cowgill was cited for "fundamental contributions to the science of nutrition, particularly his research on the functional role of vitamin B_1, his success as a teacher of young biochemists and his outstanding editorial work for the *Journal of Nutrition.*" Each year a committee of the Grocery Manufacturers of America selects for its award a scientist who has made an important contribution to public health in the science of nutrition. Dr. Cowgill, a member of the Yale faculty since 1921, has been a member of the Council on Foods and Nutrition of the American Medical Association since 1938.

Scholarships in Cerebral Palsy.—Scholarships for special study in cerebral palsy are being offered to physicians, therapists and educators by the National Society for Crippled Children and Adults. Funds in the amount of $5,000 per year for three years have been granted to the National Society for this purpose by the Alpha Chi Omega national sorority. The scholarship plan provides for the training of outstanding persons who will be able to assist member societies of the national society in developing, setting up and operating facilities and centers for the use of all public and private agencies interested in helping persons having cerebral palsy. Under the program allotments, varying from $500 to $1,000 for tuition and maintenance at a recognized training center for the minimum of three months, are given to qualified persons. Doctors, therapists, educators and other needed workers are eligible to receive the scholarships. For information address the National Personnel Registry and Employment Exchange, National Society for Crippled Children and Adults, Inc., 11 South La Salle St., Chicago 3.

Staff for WHO Secretariat Appointed.—Since September 1, when the World Health Organization formally became a specialized agency of the United Nations, a number of internationally known public health specialists have been appointed to fill top positions in the World Health Organization Secretariat. Among the persons named by Dr. Brock Chisholm, director-general of the World Health Organization, are the following: Dr. Raymond Gautier, Switzerland, assistant director-general in charge of the department of technical services; Dr. William P. Forrest, United Kingdom, special assistant to the director-general; Dr. Yves Biraud, France, director, division of epidemiology; Dr. William Bonne, Netherlands, director, division of planning; Dr. Frank A. Calderone, United States, director, Technical Liaison Office, New York; Dr. Neville Goodman, United Kingdom, director, Division of Field Operations; Dr. Norman Howard-Jones, United Kingdom, director, Division of Editorial and Reference Services, and Mr. Milton P. Siegel, United States, director of administration and finance.

American Academy of Allergy.—The annual meeting of the American Academy of Allergy will be held at Chalfonte-Haddon Hall, Atlantic City, December 6-8. All physicians interested in allergic problems are invited to attend the sessions as guests of the academy by registering without payment of fee. Included in the program are two memorial lectures to late members of long standing: The first, in memory of Dr. Harry D. Donnally, will be given by Dr. Thomas Francis, Ann Arbor, Mich., on "Immunology of Virus Diseases." The second, in memory of Dr. Robert Ward Lamson, will be given by Drs. Thomas H. Holmes, Helen Goodell, Stewart Wolf and Harold G. Wolff, New York, on "An Experimental Approach to Psychosomatic Phenomena in Rhinitis and Asthma." The presidential address will be made by Dr. Karl D. Figley of Toledo, Ohio. At the banquet December 7 William J. Hale, LL.D., consultant to Dow Chemical Company, Midland, Mich., will speak on "Today's Food and Its Aftermath."

Western Surgical Association Meeting.—The annual meeting of the Western Surgical Association will be held at the Statler Hotel, St. Louis, December 2-4, under the presidency of Dr. Harry B. Zimmerman, St. Paul. Among others the following have been invited to read papers:

Rudolph J. Noer and John W. Derr, Detroit, Revascularization Following Experimental Mesenteric Occlusion.
Arthur C. Pattison, Los Angeles, Portacaval Anastomosis in Cases of Advanced Portal Cirrhosis.
Col. Frank E. Hamilton, M.C., and Major George J. Hayes, M.C., Washington, D. C., Pre-Frontal Lobotomy in the Management of Intractable Pain.
Stanley E. Lawton and Arthur R. Marks, Chicago, Gastrojejunocolic Fistula.
E. Lee Strohl and Guy V. Pontius, Chicago, Multiple Polyposis of the Colon.
Charles W. Mayo and Roberta G. Rice, Rochester, Minn., Situs Inversus Totalis: Statistical Review of 76 Cases with Special Reference to Disease of the Biliary Tract.
Frederick R. Harper, William B. Condon and William H. Wierman, Denver, Chronic Suppurative Lung Disease.
Ralph G. Carothers, Cincinnati, and Foster J. Boyd Jr., Indianapolis, Traction Technique for the Reduction of Colles' Fractures.
Robert A. Wise, Portland, Ore., Hemipelvectomy for Malignant Tumors of the Bony Pelvis.

The presidential address will be delivered at the opening of the Friday afternoon session. The annual dinner will be December 3 at 6:30 p. m.

Pharmaceutical Manufacturers Award.—The National Institutes of Health, Bethesda, Md., have been selected to receive the American Pharmaceutical Manufacturers' Association 1948 Scientific Award. It will be presented by Dr. Ernest E. Irons, Chicago, President-Elect of the American Medical Association, at a dinner in the Waldorf-Astoria Hotel, New York, at 8 p. m., December 7. Dr. Rolla E. Dyer, director of the institutes, will give the acceptance address. The ceremony attending the award will consist of morning, afternoon and evening sessions reporting new and basic information on major research progress in drug therapy. The program is as follows:

Austin Smith, Chicago, Trends in Drug Therapy Research.
Cornelius P. Rhoads, New York, Basic Research Progress in the Field of Cancer.
Milton V. Veldee, Washington, D. C., Trends in the Field of Biologic Products.
Perrin H. Long, Baltimore, Basic Research Progress in the Field of Antibiotics.
Keith S. Grimson, Durham, N. C., Basic Research Progress in the Field of High Blood Pressure.
Randolph West, New York, Use of Vitamin B_{12} in Treatment of Pernicious Anemia.
Isaac Starr, Philadelphia, On the Stimulation of Medical Research by Means of Grants: Its Promise and Its Dangers.
Charles G. King, Ph.D., Scarsdale, N. Y., Basic Research Progress in the Field of Nutrition.
Roy R. Kracke, Birmingham, Ala., Basic Research Progress in the Field of Blood Disorders.
Arthur C. DeGraff, New York, Basic Research Progress in the Field of Heart Diseases.
Charles Ragan, New York, Basic Research Progress in the Field of Arthritis.
Howard T. Behrman, New York, Basic Research Progress in the Field of Dermatologic Disorders.

In the past four years this award has been given to the National Research Council, the Rockefeller Institute for Medical Research and the American Medical Association.

Social Hygiene and the Defense Program.—The American Social Hygiene Association has reactivated its Committee on National Defense Activities, and preliminary conferences have been held with representatives of the National Defense Establishment and United States Public Health Service. The Interdepartmental Venereal Disease Control Committee, which was appointed during World War II and comprises representatives of the Army, Navy, Air Force, National Defense Establishment as such, the U. S. Public Health Service, the Federal Security Agency, and the American Social Hygiene Association as an advisory member, also held a conference and formulated proposals for the services of the association to be included in the Defense Program. Among the proposals submitted to the president of the association were: to act as an advisor to the National Defense Establishment in matters pertaining to community education and the repression of prostitution; to make available to the armed forces, on request, educational material and advisory services; to bring citizen support to good law enforcement, social treatment and individual health education through the home, the church and the school.

A grant from the reserve funds of the United Service Organization enables the American Social Hygiene Association to undertake the services requested by the interdepartmental committee. The staff has already been recruited, trained and assigned to field and headquarters duties. Field offices have been established where required, and close cooperation with military authorities has been established on national, regional and local levels.

Among the objectives of the new project are to provide military and civilian authorities with reliable information concerning demoralizing conditions which may result in the spread of venereal diseases, especially near military posts and defense industrial establishments; to interpret to the public the present character guidance policy of the National Defense Establishment as it relates to the men and women in these services.

Dr. Walter Clarke, executive director of the American Social Hygiene Association, has general supervision of the project from the main office at 1790 Broadway, New York. This project will be kept separate from the permanent activities of the American Social Hygiene Association, which are financed entirely by private gifts through the Community Chest and sponsored appeals, and which will go along as usual.

Marriages

William Cunningham Crittenden, Birmingham, Ala., to Miss Constance C. Glasgow of Lexington, Va., in August.

Abraham Irving Friedman, Hackensack, N. J., to Miss Helene Marion Bennett of New York, in August.

Hugh Franklin Swingle Jr., Johnson City, Tenn., to Miss Joan Dickey Lincoln of Marion, Va., August 21.

Joseph A. Ambrosino, New York, to Miss Roberta Ann Redden of Dover, N. H., in August.

Harvey James Howard, St. Louis, to Mrs. Alice Tilson Eastes of Baltimore, August 24.

Aliza Cole, Chilhowie, Va., to Mr. Robert A. Lightburn at New York, August 1.

Deaths

James King Hall ⊕ Richmond, Va.; born in Piedmont, N. C., Sept. 28, 1875; Jefferson Medical College of Philadelphia, 1904; member of the National Committee on Mental Hygiene, American Association on Mental Deficiency, Association for the Study of Internal Secretions, American Association for the Advancement of Science and the Virginia Academy of Science; past president of the American Psychiatric Association, Association of Private Psychiatric Hospitals, Richmond Academy of Medicine, Tri-State Medical Association of Virginia and the Carolinas and the Southern Psychiatric Association; in 1933-1934 vice president of the Medical Society of Virginia; specialist certified by the American Board of Psychiatry and Neurology; served as member of the board of the Central State Hospital, Petersburg, and chairman of the Governor's Board on Criminal Mental Hygiene; for many years member of the medical staff of the State Hospital, Morganton, N. C., one of the founders and medical superintendent of the Westbrook Sanatorium; associate editor of *Southern Medicine and Surgery* and *Diseases of the Nervous System*; in 1935 received the honorary degree of LL.D. from the University of North Carolina; died September 10, aged 73.

Francis Parkman Denny ⊕ Brookline, Mass.; born in Brookline, Mass., Jan. 2, 1869; Harvard Medical School, Boston, 1895; at one time on the faculty of his alma mater; for many years health officer; established a bacteriologic laboratory in the city in 1899, the first in Massachusetts outside Boston, a tuberculosis pavilion as part of the Brookline contagious disease hospital in 1914 and a dental dispensary in 1915; member of the New England Pediatric Society and of the American Public Health Association; member of the executive committee and honorary vice president of the Massachusetts Tuberculosis League; past president of the Massachusetts Public Health Association, the Norfolk District Medical Society and the Brookline Anti-Tuberculosis Society; for twenty-six years responsible for the quarterly publication of the *Brookline Health Bulletin;* during his term of office as health officer Brookline was three times the winner of a health conservation contest sponsored by the United States Chamber of Commerce; died in New London, N. H., September 6, aged 79.

Paul Scott Hansen, Santa Barbara, Calif.; born in Columbus, Ohio, Oct. 16, 1910; Northwestern University Medical School, Chicago, 1938; interned at St. Luke's Hospital in Chicago and Massachusetts General Hospital in Boston; member of the American Medical Association; certified by the National Board of Medical Examiners; specialist certified by the American Board of Internal Medicine; formerly on the faculty of the University of Pennsylvania School of Medicine in Philadelphia and the Yale University School of Medicine, New Haven; served as a captain with the 15th Evacuation Hospital in Africa, Sicily and Italy; separated from the service as a major after thirty-three months of service overseas; consultant on blood diseases at the Santa Barbara Clinic; affiliated with the Santa Barbara Cottage Hospital and the Santa Barbara General Hospital, where he died September 26, aged 37, of *poliomyelitis.*

Bert Ira Beverly ⊕ Oak Park, Ill.; born in Richfield, Ohio, June 2, 1894; Rush Medical College, Chicago, 1924; clinical associate professor of pediatrics (Rush) at the University of Illinois College of Medicine, Chicago; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics, serving for many years as chairman of the mental health committee; member of the Illinois State Commission for Handicapped Children; served during World War I; head of the behavior clinic at the Central Free Dispensary, Presbyterian Hospital; consultant psychiatrist at the Shriners Hospital for Crippled Children and for many years on the staff of Children's Memorial Hospital, all in Chicago; author of "In Defense of Children" and "A Psychology of Growth"; died September 27, aged 54, of rupture of the chordae tendinae.

Edwin Welles Kellogg, New York; born in 1878; New York Homeopathic Medical College and Hospital, New York, 1903; member of the American Medical Association; fellow of the American College of Surgeons; formerly on the faculty of his alma mater; an officer during World War I; served as a member of the medical practice committee which had jurisdiction over all physicians and surgeons practicing in workmen's compensation cases in New York; consulting surgeon, New York Ophthalmic Hospital; affiliated with the Doctors, Park East and Flower and Fifth Avenue hospitals; died in Washington, Conn., September 11, aged 69.

Fritz Carleton Hyde, New York; born in Grand Rapids, Mich., June 3, 1876; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; at one time president of the Connecticut Medical Examining Board; member of the New England Surgical Society; fellow of the American College of Surgeons; served during World War I; for many years chief of staff and chief of medical service at the Greenwich (Conn.) Hospital and consulting surgeon at the Cape Cod Hospital in Hyannis, Mass.; died in Harwichport, Mass., September 4, aged 71, of arteriosclerosis and hemiplegia.

Joseph Francis Bredeck ⊕ St. Louis; born in St. Louis, in 1890; Washington University School of Medicine, St. Louis, 1914; received the doctor of public health degree from the University of Pennsylvania in 1917; since 1933 health commissioner; instructor in clinical medicine and lecturer in public health at his alma mater; served in France during World War I; fellow of the American College of Physicians; a drive for funds to establish a public health scholarship in his honor is being organized by friends and associates; died October 4, aged 58, of heart disease.

Robert Meston Bolton, Durham, N. H.; born in Somerset, Md., May 19, 1903; George Washington University School of Medicine, Washington, D. C., 1931; member of the American Medical Association and the Medical Society of the District of Columbia; served in the medical corps of the U. S. Naval Reserve during World War II; formerly on the staffs of the Garfield, Children's, Columbia, Casualty and Doctors hospitals in Washington, D. C.; recently appointed director of the health service at the University of New Hampshire; died September 16, aged 45.

Ward Ariel Anderson, Portland, Ore.; Ohio Medical University, Columbus, 1906; on the staff of Morningside Hospital; died in Emanuel Hospital August 24, aged 71, of heart disease.

Cecil V. Bachelle ⊕ Chicago; Rush Medical College, Chicago, 1900; fellow of the American College of Surgeons; formerly on the faculty of the College of Physicians and Surgeons, School of Medicine of the University of Illinois; affiliated with Walworth County Hospital in Elkhorn, Wis., and Henrotin Hospital; died September 21, aged 73, of chronic *myocarditis.*

George Elliott Patrick Barnes, New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1931; member of the American Medical Association; served during World War II; affiliated with Southern Baptist, Lakeshore and Mercy hospitals; died September 4, aged 43, of injuries received in an automobile accident.

Ben P. Bell, Oklahoma City; University of Oklahoma School of Medicine, Oklahoma City, 1942; member of the American Medical Association; interned at St. John's Hospital in Tulsa; served a residency at St. Elizabeths Hospital in Washington, D. C.; served in the medical corps of the U. S. Naval Reserve during World War II; affiliated with the Coyne Campbell Sanitarium; killed September 5, aged 33, when the plane he was flying crashed.

Clarence Joseph Bertaut, Chicago; St. Louis College of Physicians and Surgeons, 1920; Chicago Medical School, 1922; on the staff of the Bethany Hospital; died in Oak Park, Ill., September 14, aged 52, of coronary thrombosis.

Newton Emerson Bitzer ⊕ Lancaster, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; fellow of the American College of Surgeons; examiner for the draft board during World War I; served as a member of the local board of health; for many years medical director of St. Joseph's Hospital; died in Lancaster General Hospital August 15, aged 75.

Bert John Bixby, Buffalo; University of Buffalo School of Medicine, 1903; member of the American Medical Association and the National Gastroenterological Association; veteran of the Spanish-American War and World War I; served on the staff of the Millard Fillmore Hospital; died September 7, aged 72, of hypertrophic cirrhosis of the liver.

Nathan Bernard Bluestone ⊕ Yorktown Heights, N. Y.; University of Glasgow Medical Faculty, Scotland, 1933; member of the board of education; on the staffs of the Peekskill (N. Y.) Hospital and Northern Westchester Hospital in Mount Kisco; served overseas during World War II; died August 25, aged 43.

Peter Bourbaki, Kansas City, Kan.; National University of Athens School of Medicine, Greece, 1895; Loyola University School of Medicine, Chicago, 1917; served on the staffs of Bethany Hospital, Providence Hospital and St. Margaret's Hospital, where he died September 8, aged 75, of multiple myeloma.

Walter R. Brock ⊕ Sheldon, Iowa; Drake University Medical Department, Des Moines, 1894; past president of the Sioux Valley Medical Association, serving for many years as treasurer; in 1931 vice president of the Iowa State Medical Society; past president of the O'Brien County Medical Society; for many years city health officer; on the staff of Good Samaritan Hospital; died September 11, aged 78, of coronary occlusion.

Henry Alexander Brown, Los Altos, Calif.; Medico-Chirurgical College of Philadelphia, 1900; member of the American Medical Association; veteran of the Spanish-American War; fellow of the American College of Surgeons; specialist certified by the American Board of Ophthalmology; formerly on the staff of the Stanford University School of Medicine, San Francisco; died September 18, aged 77, of coronary disease.

James Mack Brown, Gadsden, Ala.; Medical College of Alabama, Mobile, 1889; member of the American Medical Association; died August 14, aged 82, of coronary thrombosis.

Richard C. Buchanan ⊕ Green Bay, Wis.; Detroit College of Medicine, 1896; fellow of the American College of Surgeons; on the staffs of St. Mary's Hospital, Bellin Memorial Hospital and St. Vincent's Hospital, where he died August 21, aged 78, of coronary thrombosis.

Charles Howard Cale, Neffs, Ohio; Starling Medical College, Columbus, 1904; member of the American Medical Association; past president of the Belmont County Medical Society; affiliated with City Hospital in Bellaire; died July 23, aged 72, of acute coronary occlusion.

William R. Camp, Fairburn, Ga.; Atlanta Medical College, 1890; member of the American Medical Association; formerly mayor and for many years on the city council; county physician; died August 25, aged 80, of carcinoma of the lung.

Thomas Francis Capeles ⊕ Haverhill, Mass.; Tufts College Medical School, Boston, 1909; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member of the New England Otological and Laryngological Society; affiliated with the Massachusetts Eye and Ear Infirmary, Boston, and Hale Hospital; member and clerk of the Haverhill park board; died August 12, aged 63, of uremia and carcinoma of the prostate.

Webb Parks Chamberlain ⊕ Cleveland; Western Reserve University Medical Department, Cleveland, 1903; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; affiliated with the Lakewood and Lutheran hospital; died July 20, aged 71, of carcinoma.

Helen E. Collins, Chicago; Hering Medical College, Chicago, 1900; died September 26, aged 78, of pneumonia.

Willis Scott Cooke, Cazenovia, N. Y.; New York University Medical College, New York, 1897; formerly member of the state compensation board; served during World War I; died in the Crouse Irving Hospital, Syracuse, September 2, aged 75, of coronary thrombosis.

Charles Campbell DeKlyn, New Rochelle, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1905; served during World War I; on the consulting staff of the New Rochelle (N. Y.) Hospital, where he died September 7, aged 66.

Lillian Elizabeth Dempsey, Vallejo, Calif.; University of Oregon Medical School, Portland, 1896; died September 19, aged 75, of cerebral hemorrhage.

Michael F. J. Donovan ⊕ Chicago; Bennett Medical College, Chicago, 1915; surgeon for the Chicago, Rock Island and Pacific Railroad; affiliated with St. George Hospital, where he died September 17, aged 65, of coronary thrombosis and diabetes mellitus.

James Maurice Downey ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1891; also a graduate in pharmacy; fellow of the American College of Surgeons; past president of the Brooklyn Surgical Society; affiliated with the Hospital of the Holy Family and St. Mary's Hospital; died September 12, aged 82, of coronary disease.

Sylvester Amos Draper, Orlando, Fla.; Medical College of Virginia, Richmond, 1900; died August 16, aged 74.

Robert Earl, St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1896; member of the American Medical Association and the Western Surgical Association; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; affiliated with the Midway and Mounds Park hospitals; died August 11, aged 65.

Gottfried Arthur Estel ⊕ North Madison, Ind.; St. Louis University School of Medicine, 1904; affiliated with the Madison State Hospital; died in Murphysboro, Ill., August 20, aged 68, of chronic endocarditis.

Marvin A. Gantt, Houston, Texas; Louisville (Ky.) Medical College, 1904; member of the American Medical Association; died recently, aged 70, of carcinoma of the liver.

William Harris Gitman, Dayton, Ohio; Université de Lausanne Faculté de Médecine, Switzerland, 1938; member of the American Medical Association; interned at the Good Samaritan Hospital; served during World War II; affiliated with the Good Samaritan, Miami Valley and St. Elizabeth hospitals; died September 3, aged 40, of coronary thrombosis.

William Christian Hager, Brooklyn; Long Island College Hospital, Brooklyn, 1896; visiting physician at the Swedish Hospital; died September 12, aged 81, of uremia.

Henry Steers Holland, New York; Columbia University College of Physicians and Surgeons, New York, 1905; member of the American Medical Association; fellow of the American Society of Anesthetists; on the staff of Sloane Hospital for Women and the Doctors Hospital; died in the Midtown Hospital August 28, aged 67, of carcinoma of the left submaxillary gland.

Otto Landman, Toledo, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1887; fellow of the American College of Surgeons; on the staff of St. Vincent's Hospital; died July 11, aged 86, of Parkinson's disease.

Ross Simonton McElwee ⊕ Statesville, N. C.; University of Maryland School of Medicine, Baltimore, 1909; member of the House of Delegates of the American Medical Association from 1941 to 1945; member of the Radiological Society of North America; on the staff of the H. F. Long Hospital; president of the Statesville Chair Company and the Statesville Industrial Bank; died September 8, aged 68, of carcinoma.

DIED WHILE IN MILITARY SERVICE

Jack Leslie Doughtie ⊕ Lieutenant Colonel, M.C., U. S. Army, Cleburne, Texas; born in Cleburne, Sept. 26, 1912; University of Texas School of Medicine, Galveston, 1937; formerly an intern at the John Sealy Hospital in Galveston and a resident at the Brackenridge Hospital in Austin; entered the medical reserve corps of the U. S. Army in July 1940 and served until July 1941, when he entered the regular army; served a residency at the Brooke General Hospital, Fort Sam Houston, San Antonio; died in the Walter Reed General Hospital, Washington, D. C., March 22, aged 35, of heart disease.

William Wills Green Jr., Tarboro, N. C.; Duke University School of Medicine, Durham, 1944; interned at the Duke Hospital in Durham; certified by the National Board of Medical Examiners; member of the American Medical Association; captain, medical corps, Army of the United States; died March 18, 1947, aged 26, of cerebral hemorrhage.

Albert Clark Kinney Jr., Hardwick, Vt.; University of Vermont College of Medicine, Burlington, 1946; interned at the Maine General Hospital in Portland, Me.; first lieutenant, medical corps, Army of the United States; killed in Alaska Dec. 28, 1947, aged 27, while on a mission to rescue the crew of an airplane which crashed on the Seward Peninsula.

Edward George Meter Jr., Merion Station, Pa.; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1936; interned at the Fitzgerald-Mercy Hospital in Darby, Pa., served a resident fellowship in radiology at the Graduate Hospital of the University of Pennsylvania in Philadelphia; specialist certified by the American Board of Radiology; major, medical corps, Army of the United States; attached to the 183rd General Hospital, Fort Richardson, Alaska; died June 12, 1947, aged 38, of acute myocardial infarction.

Maurice Louis Silverstein, Boston; Boston University School of Medicine, 1923; member of the American Medical Association; interned at the Massachusetts Homeopathic Hospital; commissioned a captain in the medical corps, Army of the United States, Feb. 4, 1944; died in the Lovell General Hospital, Fort Devens, Mass., Feb. 16, 1946, aged 47, of tuberculous meningitis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 23, 1948.

The Remuneration of Specialists in the National Health Service

A body known as the Spens Committee was recently appointed by the government to investigate and report on the remuneration of specialists employed under the National Health Service. They recommended that the total range of remuneration for a full time specialist should be $6,000 to $20,000, but that remuneration above $10,000 should depend on the award of special distinction. The government now announces that it has had under review the report of the Spens Committee and has decided to set up a special awards committee. It will be a national committee charged to select those specialists whose outstanding distinction merits higher financial rewards than the normal rates.

The principle of the decision cannot be gainsaid, but how is it likely to work? It is certainly a delicate operation, which is entirely new in this country, for a committee to make a survey of the specialists of the country and decide who are to be proclaimed "distinguished" and who not. Another trouble is the matter of expense, but that never seems to trouble the socialist government, who have made permanent, as far as they can, the crushing taxation of the war. As the consultations with or treatment by specialists are free to the patients, they will demand the specialists who have been dubbed "distinguished" to the neglect of the others. It is well known that many of the younger men, who are to get lower remuneration, are just as competent for many purposes as the "distinguished" ones. Under private practice the matter is easily solved. The general practitioner recommends the specialist most suitable both for the case and the patient's pocket. But under National Health Insurance he passes the unnecessary increased cost on to the taxpayer.

The Nuffield Foundation

The Nuffield Foundation, because of the munificence of the automobile magnate Lord Nuffield, has spent or promoted grants amounting to $8,500,000 for research in its first five years. In their third report, just published, the trustees welcome the increased support of the state for learning and research but think that this does not decrease the need of alternate sources of support if the democratic principle is to be upheld, that there should be room for more than one opinion and for more than one means of putting that opinion to the test. The foundation is supporting three university chairs of industrial health, one of child health and four schools of dentistry. It is also financing laboratory studies of the blood and of the physiology of learning in animals, as well as some important sociomedical inquiries. A remarkable one is into the nature and circumstances of the middle class, "the main repository not only of administrative and professional ability but also of our cultural capital." This class has in the past received far less attention than have the wage earners. The work is to be undertaken by the London School of Economics with a view to studying not only how people rise and fall in our complicated caste system but also whether the prevailing conditions of life for the middle class are becoming too difficult. The difficulty certainly is mainly due to the confiscatory prolongation of taxation on the war level to finance the socialistic measures of the labor government.

A gift of $1,800,000 has been made to the Nuffield Foundation by Captain O. Bird, who has suffered from osteoarthritis for many years, for promotion of research into the prevention and cure of rheumatism.

Rehabilitation Centers

Since the war great attention has been given to rehabilitation. It began with the treatment of those who had recovered from their wounds but has been extended to disability due to other causes. For several years a residential rehabilitation center for the reconditioning of men who have left a hospital but are not fit immediately for full time employment or vocational training has been in operation near London, at Egham, Surrey. The experiment has so justified itself that the Ministry of Labor began to make plans for other centers, but there is great difficulty in securing premises and adapting them for this purpose. The Minister of Labor has therefore decided to use government training centers temporarily.

The objects of the course at these centers are as follows: (1) to restore to fitness and confidence those who, although not in need of active medical treatment, are not fit for full time employment; (2) to discover by observation and tests and with medical advice the personal factors impeding satisfactory settlement in employment and the types of employment most likely to lead to permanent resettlement and (3) to give guidance to placement officers of the Ministry about the effects of a disability on a person's working capacity. The maximum length of the course will be twelve weeks, but it is expected that in the majority of cases a month or six weeks will be sufficient. Efforts will be made to find for the person the type of employment or training recommended by the specialist officers. Those undergoing the course will receive allowances for their support. Three centers have already been opened, and it is planned to open ten more in large towns.

What is an Accident?

What is an accident may seem to be a simple question to most persons, but the lawyers wrangle about the meaning of the term. The medicolegal correspondent of the *British Medical Journal* points out that the tendency of our highest tribunal, the House of Lords, to interpret the Workmen's Compensation Acts "beneficially" has led to decisions which have expanded the concept of injury by accident to an extent that puts a severe strain on the sense of the ordinary person. Compensation was awarded to a workman who claimed that he contracted Raynaud's disease from vibration of a rotary tool and to another who suffered from hernia alleged to be due to vibration of a pneumatic drill. The classic case, on which these decisions were based, was that of a girl who, after sustaining numerous cuts and scratches on her hands in the course of her work over a long period, became totally incapacitated as a result of blood poisoning. It was held that she was not the less entitled to compensation because her disease was due not to one definite and specified accident but to a series of accidents, each of which was specific and ascertainable, though its actual influence on the resulting illness could not be precisely fixed. But at last the House of Lords seems to have called a halt to this process of extension of the meaning of accident.

A workman contracted silicosis through prolonged work as a slate cutter. He complained compensation for injury by accident, arguing, as in the previous cases, that each particle of silica had caused a separate accident and that his condition was due to accumulation of these slight injuries. His claim was rejected on the grounds that the disease was not due to an accident as the word was used in the Act, or to a series of accidents, but was the result of a continuing process repeated from day to day. Although it is possible to analyze silicosis into a series of separate injuries caused by separate accidents, the attribution of the disease to an accidental cause is unreal. The distinction between accident and disease is well founded. No explicit formula could be adopted with safety, but there must come a time when the indefinite number of so-called accidents and the length of time over which they occurred take away the element of accident and substitute that of process. Silicosis is such and could not be said to be the result of injury by accident. The case of the girl with the scratched hands was the high water mark of cumulative injury by infinitesimal accidents.

PARIS

(From Our Regular Correspondent)

Oct. 21, 1948.

Neurosyphilis and Penicillin

Girard, Moreau and H. Fraisse have reported to the Lyons Society of Dermatology and Syphilography their results in 19 cases of neurosyphilis treated with intramuscular injections of penicillin every three hours, or twice a day in a delaying substance. They began treatment with a dose of 30,000 units and progressed up to 300,000 units, to a total of 5,000,000 units. In tabes, results were on the whole satisfactory: fulgurating pains disappeared frequently, even in cases that had resisted all previous treatments; improvement of sphincter disorders occurred, and there was the possibility of an improvement of ataxia. In general paralysis, results were less brilliant; rather frequently, however, there was improvement of disorders affecting intellect and character, and a disappearance, after treatment, of hyperalbuminosis and hypercytosis in the cerebrospinal fluid. The serologic reaction remained positive most of the time. In dementia paralytica penicillin is to be considered rather as an adjuvant, associated with malaria therapy. The authors have noted a few reactions consisting in the aggravation of functional signs and, in 1 case, in the transitory appearance of Wernicke's aphasia, which proves that the treatment has to be used cautiously.

New Laws Concerning Venereal Disease

The new law of July 8, 1948, grants to sanitary authorities the right to demand from a person against whom exist "precise, serious and concordant presumptions" of having contaminated one or several persons with a venereal disease a medical certificate stating whether he has a contagious venereal disease or not. If this certificate seems contradictory to the epidemiologic history, a medical examination by an approved venereologist or an approved dispensary can be demanded. The new law reinforces the compulsory sanitary supervision, decreed in 1947, of every person entered in the sanitary and social registry of prostitutes. The sanitary authority is to be informed of any change of residence of any person placed under sanitary supervision, and all prosecutions for soliciting have to be reported to the Sanitary Authority in order to enable it to cause the said person to be examined. The notation in the registry of prostitutes now becomes compulsory when there is repetition of the offense or when the person suffers from a venereal disease. But the same section prohibits the inclusion in the registry of any defaulter under 18 years of age and of any under 21 on probation. Another law, of Aug. 28, 1948, divides the antivenereal dispensaries into three categories: (1) public dispensaries run by the state, (2) those run by associations recognized as of public interest and by institutions of the Social Security and (3) dispensaries run by private organizations and private persons; these can be open only after a previous agreement of the "Préfet," granted on recommendation of the district health director. Every department must have at least one hospital comprising a ward for venereal diseases. In every department, the service of the antivenereal campaign is to be under the management of a doctor in chief, appointed by the Ministry for Public Health and Population. The state shares the expense of establishing new dispensaries and for the extension of old ones. The subsidy may reach 50 per cent of the cost.

Death of Professor Lenormant

Professor C. Lenormant died at the age of 73. A descendant of intellectual ancestors, he was a brillant scholar and a disciple of Reclus, Bouilly, Gerard, Berger, Marchant and Rochard. He was a hospital surgeon at the age of 27, associate professor at the age of 30 and professor of surgical clinics at the age of 43. His works on encapsulating plastic peritonitis, volvulus of the cecum, rectal prolapse, diaphragmatic hernias, traumatic chylothorax, thymus hypertrophy and fractures of the calcaneus will long retain their value in the history of surgery. In collaboration with P. Lecene, whom he succeeded in the professorship of external pathology, he studied hemorrhagic pancreatitis, pneumococcic peritonitis, exostoses and chondromas and nonparasitic cysts of the long bones. He had been, for a time, general secretary to the Academy of Surgery. He contributed to the *Presse Médicale* and the *Journal de Chirurgie,* of which he was one of the founders. During the occupation he was a *resistant*; on his proposal, the Academy of Medicine voted a protest against the gynecologic visit, imposed on French women deported to Germany by the "Service of Compulsory Labor." It was he who wrecked the Nazi scheme to pair each of the principal French medical journals with a German review.

BRAZIL

(From Our Regular Correspondent)

São Paulo, Oct. 25, 1948.

Amebiasis and Chronic Cholecystitis

In 500 cases of intestinal amebiasis, Professor Felicio Cintra do Prado of Escola Paulista de Medicina found 11 cases in which there was a prevalence of symptoms generally attributed to disturbances of the biliary ducts. The patients showed steady or intermittent pain in the hepatic region, tenderness over the vesicular area, nausea before breakfast and dyspeptic pain caused by foods, especially fatty foods. Cholecystography and duodenal intubation did not reveal any abnormality in these patients; feces, however, contained Endameba histolytica, and the apparently vesicular symptoms disappeared with the specific antiamebic treatment. Such cases are due to general toxic manifestations acting sporadically on the vesicular functions and, perhaps, in some cases to colitis predominating on the hepatic flexure, according to Professor Prado.

Nervous Reactions to Diphenhydramine Hydrochloride

Dr. J. Pereira Jr. of Instituto Biologico of São Paulo reported recently the case of a white man aged 23 years who, after 300 mg. of diphenhydramine hydrochloride, taken over a period of three days, had from the fourth day on tendency to sneeze and a dysenteric syndrome of short duration with nausea and vomiting; on the fifth day, somnolence, confusion, hallucinations and purposeless kinetic impulses; a sallow skin; bilateral palpebral drop with temporary blindness; internal strabismus of the right eye with paralytic bilateral mydriasis; he was always apyretic and without convulsions or spasticity; deep and cutaneous reflexes were decidedly depressed, but pulse rate, blood pressure and temperature were always in normal range. In four days all signs, but the ocular, were on the wane. The latter disappeared slowly in about one and a half months, with residual hemianopsia of the left eye.

After comparison of the side and toxic effects of the drug, in the literature and in this case, with signs of local bulbar anesthesia in animals, the theory is put forward that the narcotic effects and permeability-changing properties of the drug with respect to the nervous system explain the symptoms noted, without regard to any local atropine-like action of the drug.

Correspondence

UNIVERSIDAD CATOLICA DE CHILE ESCUELA DE MEDICINA

To the Editor:—In the May Issue of The Journal an article was published on Medical Education in Latin America, by Dr. Morris Fishbein. In the paragraph devoted to Chile, he made several observations on the official medical school, which is supported by the government. With regard to our Catholic University school of Medicine, he merely names it to state that it is controlled by the official school, that it follows the French system of teaching and that it has only five years of medical studies.

In order to add some information to that already given, we wish to inform you of several facts which may be of interest.

1. The Catholic University School of Medicine has been in existence only eighteen years. It has gradually increased its courses as far as the fifth year, thus excluding only the medical specialties, because it lacks the necessary hospital facilities.

2. The admittance to the first year of premedical studies is limited to only forty students, every year selected from about two hundred applicants. A second selection takes place during this year, as only thirty are admitted to the final examination.

3. The premedical teaching, which correspond to the first two and one-half years, is principally practical, given in the different laboratories, which are properly and sufficiently equipped for the number of pupils to be trained there.

4. The medical teaching, initiated in the second half of the third year, is given in the clinical hospital, provided with one hundred and fifty beds and adequate services of a clinical laboratory, a roentgenologic laboratory and a laboratory of pathologic anatomy. The medical teaching is also fundamentally practical, and the students have to spend four hours each morning in the hospital wards, medical and surgical on alternate days, and in the afternoon, besides attending some other courses of the curriculum, they assist in the outpatient department and make rounds in the wards assigned to them.

The medical and surgical teaching is not divided into secondary courses, but is fundamentally unified.

5. There are two medical libraries, one medical in the hospital, and one premedical in the medical school. About seventy medical publications are regularly received, but the number of books available is small because of scarcity of funds.

6. The research work that is done in the different laboratories is indicated by the fact that during the last six years they have produced scientific papers, published in known North American, European and Chilean medical magazines. (We are sending a list of these papers).

7. With regard to the teaching staff, about 80 per cent are half time workers in the medical school or hospital, and 5 per cent are in full time jobs. We recognize that this is a considerable handicap and that all of these men receive insufficient salaries, but our scarcity of funds does not allow us to do better.

Finally, we want to make it clear that this type of medical teaching follows much more closely on the North American system than the French or Spanish plan, and it has been successfully applied because many of our head men have had a medical or a scientific training in different North American medical schools and hospital or scientific centers, and because some of our laboratories have benefited from funds given by North American foundations for the development of scientific research.

Joaquin Luco, M.D.,
Director of the Medical School.
The Medical Department,
Catholic University of Chile.
Ramon Ortuzar, M.D.,

CLUBFOOT IN NEWBORN INFANTS

To the Editor:—I am writing you in reference to the article in the September 4 issue of The Journal, page 19, "Cohesive Bandage for Clubfoot in Newborn Infants," by Emil D. W. Hauser, M.D., Chicago. I think it extremely unfortunate that an orthopedic surgeon with the standing of Dr. Hauser, particularly one who is so well recognized for his knowledge and skill in treatments of condition of the foot, would make such positive and misleading statements in regard to the use of plaster in the treatment of congenital clubfeet.

Whether or not plaster is the best method, or whether or not cohesive bandage is an improvement over the plaster technic, it has been well established for many years that plaster of paris casts could be applied as early as the first day with perfect safety and that correction could and should be promptly started. I think it is unfortunate that in a journal which is primarily directed toward the general practitioner statements should be made that it has been the practice to postpone the treatment of congenital clubfeet until the infant is 3 months old because of difficulties in plaster technic. Whether one uses adhesive plaster, plaster of paris, Dennis-Brown splints or cohesive plaster, it has been the practice for many years among orthopedic surgeons to start treatment within the first few days after birth.

In Dr. Hauser's desire to emphasize the improvement by the use of cohesive bandage, I am afraid he has been guilty of overstatement in regard to the difficulties and dangers of other methods.

We have been teaching our students for many years of the importance and necessity of treating these cases immediately after birth, and it seems unfortunate that the implication should be made that unless they are treated by cohesive bandage, treatment must be postponed for three months.

Don H. O'Donoghue, M.D., Chairman,
Department of Orthopedic Surgery,
University of Oklahoma School of Medicine.

To the Editor:—The article by Emil Hauser in The Journal for September 4, page 19, undoubtedly must have been read with considerable astonishment by many orthopedic surgeons.

It contains statements which most of us have not found to be true in our practice. ". . . plaster technic is extremely difficult and generally considered impossible until the infant is 3 months old. . . ." I do not know just how many newborn infants with clubfoot have been corrected by myself before they even left the nursery of the obstetrical department, but the number is considerable. ". . . it was impossible to treat newborn infants because of technical difficulties. . . ." This is a most amazing statement, and I am sure that it has amazed other orthopedic surgeons also. Personally, I have never encountered any particular difficulties in applying small plaster bandages to the tiny feet of newborn infants.

It is unfortunate that the magazine *Newsweek* picked up the article and published it, since it creates an entirely wrong impression, not unlike the articles of one rather prominent scribbler of medical potboilers.

One calls to mind the remark made by Frank Ober when one of my fellow students long ago asked him how long one should wait before beginning to correct a clubfoot. His reply was: "If it is a breech, you wait until the head's delivered."

Edward Parnall, M.D.
Albuquerque, N. M.

Note:—These letters were referred to Dr. Hauser, who writes:

To the Editor:—We are all in accord with the statement at the outset of the article, that the sooner clubfoot is treated the better. Apparently, however, our experience and observation have led to different conclusions as to the feasibility of using and maintaining plaster casts on newborn infants and up to the age of

3 months. It was because I encountered and observed difficulties in applying such casts, keeping them in place and removing them, that I felt special gratification in developing the treatment with the cohesive bandage and in sharing the results with others in the profession.

EMIL D. W. HAUSER, M.D., Chicago.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Lead Poisoning as Probable or Possible Cause of Death.—This was a petition for a workmen's compensation award for the death of an employee. From the granting of an award to the widow, the insurance company appealed to the district court of appeal, first *district, division 2, California*.

The employee was a lead burner, and, although the primary cause of death was fibrinopurulent meningitis, an autopsy disclosed an abnormal amount of lead stored in his bones, brain and kidneys. Fibrinopurulent meningitis is a disease caused by a variety of organisms, some more virulent than others, and it was impossible in this case to determine the organism involved because the employee's body had been embalmed before the autopsy was performed.

The medical testimony disclosed a conflict as to whether the meningitis or lead poisoning caused the death of the employee, and the question presented on appeal was whether medical testimony that a disease possibly, as distinguished from probably, caused or contributed to death is sufficient to support a finding that it did.

So far as we have been able to discover, said the court, the question in this precise form has never been considered by any California appellate court. The rule appears to be consistently followed in other jurisdictions of this country where the question has arisen "that medical testimony as to the possibility of a causal relation between a given accident or injury and the subsequent death or impaired physical or mental condition of the person injured is not sufficient, standing alone, to establish such relation." In a prior California case it was said, "It is also true that to justify an award there must be an affirmative showing of a case within the statute and it must affirmatively appear that there exists a reasonable probability that the employee contracted the disease because of his employment." The appellate court admitted that medical testimony of possibility plus other evidence may be sufficient to support a conclusion of probability. The only other evidence in this case, however, was that of the physical symptoms of the employee before and during his last illness, and those symptoms were as characteristic of meningitis as of lead encephalitis. They therefore, concluded the court, furnish no independent evidence on which the commission could have relied, since the employee admittedly died of meningitis.

Accordingly the court held that the medical showing of a mere possibility that death resulted from lead poisoning was insufficient and the award of the Industrial Commission was annulled. *Travelers Insurance Company v. Industrial Accident Commission, 195 P. (2d) 48 (Calif., 1948).*

Workmen's Compensation Acts: Compensation Award as Bar to Malpractice Action. — This was an action for damages alleged to have been caused by the malpractice of the defendant physicians. The case was heard in the supreme court of New Jersey, Bergen County.

The plaintiff, while an employee of the Wright Aeronautical Corporation, received an injury to the index and second fingers of her right hand, arising out of and in the course of her employment. She was taken immediately to the defendants, the plant physicians, and received medical treatment from them for about two months. Some time after that she became dissatisfied with the manner in which the fractured bone in the finger was reduced by the defendants and had the job redone by a physician and surgeon of her own selection, whose bill for such services was paid by the employer as part of the compensation award. A subsequent application for a compensation award resulted in the granting of awards for both temporary and permanent disability, which awards were accepted by the plaintiff. The plaintiff then commenced this action for malpractice, contending that the plant physicians were negligent in the diagnosis and treatment of her injury. The defendants contended that the plaintiff, by accepting the compensation award, was barred from maintaining the present action.

Assuming that the defendants were negligent in the treatment of the plaintiff's injured fingers, that negligence, said the court, simply aggravated the original industrial injury. The employer was responsible in compensation for the whole injury. Since the ultimate disability, continued the court, is classable as resulting from the first injury, in that it came about through treatment of that injury and was directly connected therewith, the original industrial mishap and its assumed aggravation by the defendants should therefore be classified as one and the same compensable injury. The court then pointed out that the workmen's compensation act imposes liability for compensation on the employer regardless of fault and provides an exclusive remedy to employees for accidental injuries arising out of and in the course of employment. In accordance therewith, full compensation was paid by the employer and accepted by the plaintiff for the disability attributable to her original injury. She is entitled, concluded the court, to only one satisfaction for that injury. Here, at best, the injury was aggravated by the alleged negligence of the plant physicians. The remedy provided by the compensation act is exclusive, and any aggravation of the original injury not caused by an independent, intervening act is considered compensable. The plaintiff's right of action for negligence against the plant physicians was therefore barred by the acceptance of the compensation award, and the case was accordingly dismissed.—*Burns v. Vilardo, 60 A. (2d) 94 (N. J., 1948).*

Council on Medical Education and Hospitals

NEW HOSPITALS REGISTERED

The following hospitals were registered by the Council on Medical Education and Hospitals of the American Medical Association at its meeting in Chicago, Oct. 16-17, 1948:

Marvin [illegible]	[illegible]
Garden [illegible]	[illegible]
Oakdale [illegible]	[illegible]
Universi[illegible]	[illegible]
Florida [illegible]	[illegible]
H. C. [illegible]	[illegible]
Suwann[illegible]	Live Oak, Fla.
Dr. Strange's Hospital	McIntosh, Fla.
Bay Hospital	[illegible] Fla.
Jubal Watts [illegible]	[illegible] Ga.
[illegible]	[illegible] Ga.
[illegible]	Folkston, Ga.
[illegible]	Boise, Idaho
[illegible]	[illegible] Valley, Idaho
[illegible] Hospital	Fulton, Ky.
Our Lady of the Way Hospital	Martin, Ky.
Mary Chiles Hospital	Mount Sterling, Ky.
Montelepre [illegible]	New Orleans
Physicians a[illegible]	Shreveport, La.
Hardtner Memorial Clinic-Hospital	Urania, La.
Deer River Hospital	Deer River, Minn.
Sisters of Charity Hospital	Jackson, Minn.
Louisville Hospital	Louisville, Miss.
Beacham Memorial Hospital	Magnolia, Miss.
Bales Hospital	[illegible] Mo.
Lodge of the Turquoi[illegible]	[illegible] N. M.
Davie Hospital and C[illegible]	[illegible] N. M.
Reeves Clinic-Hospital	[illegible] N. C.
Peoples Hospital	Mansfield, Ohio
Carver Memorial Hospital	Chattanooga, Tenn.
Medical and Surgical Hospital	Brady, Texas
Camden Hospital	Camden, Texas
St. Edward Hospital	Cameron, Texas
Jones Eye, Ear, Nose and Throat Hospital	Dallas, Texas
Plains Memorial Hospital	Dimmitt, Texas
Dublin Hospital	Dublin, Texas
Memorial Hospital	Dumas, Texas
Freeport Hospital	Freeport, Texas
Hearne Clinic-Hospital	Hearne, Texas
Gonzales Warm Springs Foundation Hospital	Ottine, Texas
Ogden Hospital	Pleasanton, Texas
Fisher County Memorial Hospital	Roby, Texas
Whitney Memorial Hospital	Whitney, Texas
Winters Municipal Hospital	Winters, Texas

Miscellany

FREEDOM TO PURSUE TRUTH EXEMPLIFIED IN DISCOVERY OF THE Rh FACTOR

Condensed from a Special Lecture in Pathology delivered at the University of London by D. F Cappell, M.D., and published in the *Glasgow Medical Journal*, August 1948.

Less than fifty years ago Landsteiner discovered the three common blood groups, A, B and O, and two years later his pupils found the fourth, rarer type, now called AB. Today a bewildering array of blood groups confronts the student, the ABO system, MN and P types, the Rh groups, the four less often detected Lutheran, Levay, Kell and Lewis red cell antigens and doubtless others which await the means of accurate detection. The ABO and Rh groups are always important clinically; the others only occasionally.

There is a lesson in the way in which these discoveries were made. The clinical conditions now recognized to be associated with Rh incompatibility had been known for many years. In 1892, Ballantyne described generalized dropsy of the fetus with all the pathognomonic features including the increased size of the placenta. Then in 1909 Buchan and Comrie described the extramedullary hemopoiesis of familial icterus gravis. Ecklin in 1919 recorded the first accurate observations on congenital hemolytic anemia. In 1932, Diamond, Blackfan and Baty correlated the pathologic findings in all three fetal disorders and described the essential unity of their pathogenesis. However, it was Parsons, Hawksley and Gittens who in 1933 first recognized the essentially hemolytic nature of these disorders and pointed out that the erythroblastosis which had misled other observers was merely a compensatory mechanism. Time has shown that they were right. In 1938, Darrow suggested that the phenomena could best be explained on the basis of an antigen-antibody reaction. In 1939, Levine and Stetson detected an irregular agglutinin in the serum of a woman who had given birth to a stillborn child and suggested that she might have been immunized by an antigen from the fetus. Thus, the problems of erythroblastosis of the newborn were widely recognized, but they had not yielded the secret of etiology.

A point of fundamental importance is that the solution of the etiology of this type of clinical mystery arose entirely as an *unexpected by-product from purely academic scientific work.* Landsteiner's fundamental observations on the blood groups originated directly from the discovery of specific biochemical differences between species when he endeavored to determine whether within one species similar, if slighter, individual differences could also be demonstrated. He was quick to see the usefulness of his discovery and to advocate the selection of donors for transfusion on the basis of the compatibility of the blood groups of donor and recipient. The discovery that blood groups existed and that they must be taken into account in blood transfusion was therefore an unexpected windfall from fundamental biologic research. Continuing the pursuit of pure knowledge on the distribution of the M agglutinogens in human and in animal erythrocytes, Landsteiner and Weiner in 1940 announced the discovery of the Rhesus factor. Once again the clinical significance of the new knowledge was rapidly recognized and, as the basis of treatment, has been the means of saving many lives.

In these days of an impending state medical service (England—Ed.) and so-called planning, scientific workers must not be too slavishly restricted to prescribed *ad hoc* lines, but must be given freedom and support to pursue truth as an end in itself. This research on blood groups corroborates what is common knowledge among men of science everywhere, but the public does not sufficiently realize how much of our heritage of benefit discovery has been a side issue, unsuspected when the work began.

Medical Motion Pictures

FILM REVIEWS

The Preparation of Diphtheria Antitoxin and Prophylactics. 16 mm., black and white, sound, 1,300 feet (1 reel), showing time thirty-five minutes. Prepared in 1944, by H. J. Parish, M.D., and A. J. Glenny, Wellcome Physiological Research Laboratories. Produced by the G. B. Instructional, Ltd. *Procurable on loan from:* Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

This film reviews and presents in logical sequence the development of diphtheria antitoxin and toxoids. It was produced in England under war time conditions. Certain principles in immunology are stressed. The producer has attempted to incorporate all phases of the problem, and, as a result, the picture is rather long and detailed. There is no mention made of the use of penicillin in the treatment of diphtheria.

The film is suitable as a supplement to lectures offered students in bacteriology, beginning classes in immunology, public health students, nurses and technicians. It is not recommended for practitioners or interns. The photography and animation are well done.

Cesarean Section—Norton Paravesical Extraperitoneal Technic with a Case History. 16 mm., color, silent, 600 feet (1 reel), showing time fifteen minutes (sound speed). Prepared in 1948 by Milton McCall, M.D., and Arthur First, M.D., *Department of Obstetrics & Gynecology,* Jefferson Medical College, Philadelphia. *Procurable on loan from* Milton McCall, M.D., 1814 Spruce Street, Philadelphia 3.

The Norton technic for cesarean section is well depicted in this motion picture. Following the dissection of the paravesical fascia, the edge of the bladder and the exposure of the lower uterine segment are clearly demonstrated.

This is a good production, and little time is wasted with unnecessary remarks. It should prove useful for teaching obstetricians, general surgeons who do cesarean operations in neglected cases and residents and interns who plan to specialize in obstetrics and gynecology.

The titles are clear and the color photography is excellent.

The Use of Digitalis in Heart Failure. 16 *mm., color,* sound, 1,200 feet (1 reel), showing time thirty-five minutes. Prepared in 1947 by the Department of Pharmacology, Cornell University Medical College, New York Hospital, New York. Produced by Transfilm, Inc., New York. Procurable on loan from: Wyeth, Incorp., 1600 Arch Street, Philadelphia 3.

This film is a combination of a lecture, straight photography and animation depicting the prognosis of cardiac failure with the use of digitalis and digitoxin as observed by the Cornell group. Some cardiologists may disagree with some of the conclusions drawn; however, this group has been a major contributor in this field, which justifies their authority in the use of this agent.

The production could be made shorter by taking out certain sequences without destroying the purpose of the film; otherwise the film is well planned. It is suitable for showing to cardiologists, general practitioners, interns and medical students. Photography is excellent.

SELECTED LIST OF MOTION PICTURES

The department of rehabilitation and physical medicine of the New York University College of Medicine has prepared a list entitled "A Selected List of Motion Pictures on Rehabilitation and Physical Medicine." It contains about seventy-five motion pictures in rehabilitation and physical medicine screened and evaluated by the staff of the department of rehabilitation and physical medicine at Bellevue Hospital. The list does not include all the films available in this field, since some were considered obsolete or of minimal value and others have not as yet been reviewed. Copies of this list may be obtained by writing directly to the New York University–Bellevue Institute of Rehabilitation and Physical Medicine, 325 East Thirty-Eighth Street, New York 16.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

215:479-598 (May) 1948

Special Methods for Diagnosis of Tumors in Laboratory. N. C. Foot. —p. 479.
*Folic Acid Therapy: Results of Clinical Study. W. S. Adams and J. S. Lawrence.—p. 487.
Pharmacodynamic Properties of Penicillin Preparations with Prolonged Action. N. Ercoli, W. C. Hueper, L. Landis, Mary M. Lewis and others.—p. 498.
*Single Injection Treatment of Gonorrhea with Potassium Penicillin Suspension in Oil-Containing Epinephrine. A. Cohn and B. A. Kornblith. —p. 506.
Effectivness of Penicillin in Treatment of Nasopharyngeal Diphtheria. E. W. Bixby.—p. 509.
Clinical Evaluation in Children of Toxicity and Efficacy of Caronamide (4-Carboxyphenylmethanesulfonanilide) for Competitive Inhibition of Penicillin Excretion. M. Rapoport, F. B. Corneal, K. H. Beyer and W. F. Verwey.—p. 514.
Myelophthisic Anemia Presenting Manifestation of Prostatic Carcinoma with Skeletal Metastases: Effect of Castration and Stilbestrol. R. R. Commons and M. B. Strauss.—p. 525.
Antihistaminic, Antianaphylactic and Antiallergic Activity of N-(a-Pyridyl)-N-(a-Thenyl)-N', N'-Dimethyl-Ethylenediamine Hydrochloride. A. S. Friedlaender and S. Friedlaerder.—p. 530.
Perforation of Infarcted Interventricular Septum: Report of Two Cases, One Diagnosed Antemortem. N. O. Fowler Jr. and R. B. Failey. —p. 534.
Use of Vitamin E in Heart Disease. S. Baer, W. I. Heine and D. B. Gelfond.—p. 542.
*Osteoporosis Occurring During Potassium Thiocyanate Therapy for Hypertensive Disease. J. J. Hinchey, E. A. Hines and R. K. Ghormley. —p. 548.
Blood Volume Changes and Available (Thiocyanate) Fluid Space in Soldiers with Chronic Wound Infections and Associated Nutritional Depletion. W. S. M. Ling and H. Sprinz—p. 555.
Roentgenologic Evidence of Biliary Regurgitation: Roentgenologic Contributions to Diagnosis of Hypoparathyroidism, Appendicitis, Mesenteric Thrombosis. H. M. Weber.—p. 568.
Pharmacodynamic Considerations of Atropine and Related Compounds. H. C. Stoll.—p. 577.

Folic Acid Therapy.—Adams and Lawrence report on administration of folic acid in a variety of hemopoietic disorders including addisonian pernicious anemia, tropical sprue, macrocytic anemia of unexplained origin, anemia of renal insufficiency, leukemia, idiopathic leukopenia, irradiation leukopenia associated with cancer and leukopenic states of Addison's disease, Felty's syndrome and thiouracil intoxication. Thirty-four cases in all have been studied. It was found that folic acid will correct the abnormal blood changes in cases of pernicious anemia in relapse, but the neurologic manifestations of pernicious anemia are not corrected by folic acid. The reticulocyte response in liver-treated patients with pernicious anemia differs from that obtained in folic acid-treated patients. It is probably unwise to combine folic acid and iron in the treatment of pernicious anemia. One case of sprue responded favorably to administration of folic acid. Not all macrocytic anemias respond to the administration of folic acid, but in cases in which there is a megaloblastic arrest in the bone marrow, favorable results can be anticipated. Folic acid did not affect the anemia associated with chronic nephritis, and it did not alter the leukopenia associated with either Addison's disease or Felty's syndrome (1 case each). The apparent effect of folic acid on the level of granulocytes in 1 case of agranulocytosis due to thiouracil was probably coincidence, for others have reported no effect. Folic acid had no effect on the leukopenia of idiopathic states, and no beneficial effect was noted in 2 cases of leukemia treated with folic acid. Folic acid did not correct the leukopenia induced by roentgen radiation.

Penicillin in Oil with Epinephrine for Gonorrhea.—Cohn and Kornblith investigated the effectiveness of a single injection of potassium penicillin in oil containing epinephrine in the treatment of gonorrhea. They found that a single injection of 150,000 units intramuscularly or subcutaneously, in a total volume of 0.5 cc., cured 97 of 100 patients. The 3 patients who did not respond to the initial injection were promptly cured with a second injection of an identical amount of penicillin. All of 19 patients who were treated with 200,000 units in 1 cc. intramuscularly were cured. Likewise all of 18 patients treated with 300,000 units in 1 cc. and all of 9 patients treated with 600,000 units in a total volume of 2 cc. responded to this form of therapy. No untoward local or systemic reactions were observed after the subcutaneous or intramuscular injection of the suspension of crystalline potassium penicillin in oil with epinephrine.

Osteoporosis Occurring During Potassium Thiocyanate Therapy of Hypertension. — Hinchey and his colleagues observed occasional instances of osteoporosis and arthralgia after extensive use of potassium thiocyanate in the treatment of hypertension. The records of 5,000 consecutive patients with hypertension who had been seen on two or more occasions at the Mayo Clinic in the period 1939 to 1944, inclusive, were reviewed. Potassium thiocyanate had been given to 360 patients of this group. Unexplained osteoporosis occurred in 7. Since 1944 there have been 4 additional patients with this syndrome. No history of trauma or injury at onset could be elicited from these patients. One or more extremities, usually the lower, were involved. Evidence at hand seems to suggest slight and prolonged interference with calcium metabolism as a possible mechanism for production of the syndrome. Adequate calcium intake should be assured for persons taking potassium thiocyanate. Use of this drug may be contraindicated in the presence of bone malacia, such as senile osteoporosis or osteitis deformans; likewise its use may be inadvisable in the presence of fracture, not as regards union of the fracture but because any interference with calcium metabolism in the presence of increased calcium requirement might precipitate osteoporosis.

American Journal of Medicine, New York

5:1-164 (July) 1948

*Antistreptolysin "O": Study of This Antibody in Health and in Hemolytic Streptococcus Respiratory Disease in Man. L. A. Rantz, Elizabeth Randall and Helen H. Rantz.—p. 3.
Streptococcal Fibrinolysin (Streptokinase): Study of This Substance and Its Antibody in Group A Hemolytic Streptococcus Sore Throat. L. A. Rantz and P. J. Boisvert.—p. 24.
Immediate Pressor Effect of Desoxycorticosterone Acetate in Arterial Hypertension. M. L. Goldman and H. A. Schroeder.—p. 33.
Prolongation of Coagulation of Whole Blood by Dicumarol in Man. W. C. Moloney, A. S. Murphy and W. J. Harrington.—p. 40.
Thephorin in Allergy: Study of 292 Cases. E. B. Cohen, Helen P. Davis and W. A. Mowry.—p. 44.
Agranulocytosis During Propylthiouracil Therapy. E. C. Bartels.—p. 48.
Acute Porphyria: Two Cases with Autopsy Reports. Laura Hare and R. Wilmore.—p. 53.
Spontaneous Mediastinal Emphysema and Pneumothorax. A. J. Draper. —p. 59.
Pyoderma Gangrenosum in Chronic Non-Specific Ulcerative Colitis: Report of 3 Cases. W. E. Ricketts, J. B. Kirsner and S. Rothman. —p. 69.
Unusual Strain of Pseudomonas Aeruginosa Recovered from Urinary Bladder: Effects of Streptomycin. J. A. Lazarus and L. H. Schwarz. —p. 76.
What Value Enteric Coating. J. B. Wolffe.—p. 87.

Antistreptolysin "O" in Health and Respiratory Disease.—According to Rantz and his associates antistreptolysin "O" is an immune substance which neutralizes streptolysin "O" in vitro. It is contained in the gamma globulin fraction of human serum. Its concentration in the serum of healthy persons and its formation after infection in young adults by group A hemolytic streptococci has been studied. The amount of this substance in serums obtained from healthy persons varies with the geographic area of residence of the subjects and their age. Antibody levels are low through the second year of life, rise rapidly through the first decade and then decline. In studies on the mechanics of antistreptolysin response in large numbers of group A hemolytic streptococcus sore throat, it was noted that an increase in this antibody occurred regularly after infection by these organisms. The amplitude of the response varied from patient to patient, but the peak level was reached by the fourth week after the onset of acute illness in nearly all cases. No relationship between the initial antistreptolysin titer and the nature of the acute suppurative phase of hemolytic streptococcus sore throat was demonstrated, but a definite correlation between the magnitude of antistreptolysin response, severity of the initial illness and the later development of nonsuppurative complications was demonstrated. Immunologic differences were established between uncomplicated group A hemolytic streptococcus infection of the respiratory tract and that which initiates a nonsuppurative disorder. An exaggerated mean antistreptolysin response occurred in all clinical categories of the latter group. In addition, the antistreptolysin titer at the onset of the initial streptococcic illness was somewhat higher, and antibacterial precipitating antibodies were present with unusual frequency in patients who later contracted arthritis. The abnormal production of these antibodies may mirror an exaggerated immunologic hyperreactivity of human beings in whom these disease states develop.

American Journal of Orthopsychiatry, New York

18:381-570 (July) 1948. Partial Index

Trends in Orthopsychiatric Therapy. L. G. Lowrey and others.—p. 381.
Conscience in the Psychopath: Another Version. B. Karpman.—p. 455.
Emotional Problems in "Planned For" Children. Sophie Schroeder Sloman. —p. 523.
Child Guidance Services in Semi-Rural and Neglected Areas: Public Health Project in Wisconsin. Eugenia S. Cameron.—p. 536.
New Partnerships for Psychiatry. C. Binger.—p. 543.
Anxiety Neurosis. S. Sheplow.—p. 548.

American Journal of Physiology, Baltimore

153:1-196 (April) 1948. Partial Index

Proof of Hormonal Mechanism for Gastric Secretion—Humoral Transmission of Distention Stimulus. M. I. Grossman, C. R. Robertson and A. C. Ivy.—p. 1.
Adrenal Cortex and Altitude Tolerance. F. J. Kottke, C. B. Taylor, W. G. Kubicek and others.—p. 16.
*B Vitamin Requirements with Advancing Age. C. A. Mills.—p. 31.
Kidney and Nitrogen Metabolism. E. Mylon, E. R. Smith and P. Goldstein.—p. 55.
Fluid Shifts During Exposure to Accelerations: Rapid Local Changes Under Negative G. F. Stauffer and C. Hyman.—p. 64.
Sequential Changes in Oxygen Consumption During Oligemic and Normovolemic Shock and Their Meaning. R. S. Post, P. H. Visscher and C. J. Wiggers.—p. 71.
Effect of Pentothal Sodium on Blood Gas Transport. K. E. Penrod and A. H. Hegnauer.—p. 81.
Metabolic Changes of Resting Potential in Relation to Action of Carbon Dioxide. A. M. Shanes.—p. 93.
Effect of Repeated Denervation on Neuromuscular Function. J. A. Morgan, J. D. Thomson and H. M. Hines.—p. 109.
Role of Acetylcholine in Activity of Sensori-Motor and Suppressor Areas of Cortex. S. Beckett and E. Gellhorn.—p. 113.
Effect of Age on Lethality of Di-Isopropyl Fluorophosphate. A. M. Freedman and H. E. Himwich.—p. 121.
Antithrombic and Antiproteolytic Activity of Alpha Tocopheryl Phosphate. K. L. Zierler, D. Grob and J. L. Lilienthal Jr.—p. 127.
Influence of Dosage of Xanthopterin on Response in Hemapoiesis. E. R. Norris and J. J. Majnarich.—p. 133.
Residual Lung Volume Determinations by Methods of Helium Substitution and Volume Expansion. T. L. Willmon and A. R. Behnke. —p. 138.
Effect of Bile Diversion on Fecal Fat and Nitrogen Excretion. J. R. Heersma and J. H. Annegers.—p. 143.
Changes in Blood Leukocyte Level of Adrenalectomized and Normal Rats Following Administration of Typhoid Vaccine. Lena A. Lewis and I. H. Page.—p. 148.
Changes in Arterial Inflow in Dog's Leg Following Venous Occlusion: Evaluation of Results Obtained with Different Types of Flow Recorders. D. E. Gregg, W. H. Pritchard and R. E. Shipley.—p. 153.
Effects of Percutaneous Stimulation on Circulation in Normal and in Paralyzed Lower Extremities. K. G. Wakim, Jean C. Terrier, E. C. Elkins and F. H. Krusen.—p. 183.

B Vitamin Requirements with Advancing Age.—Mills observed greatly increased thiamine requirement in milligrams per kilogram of diet with advancing age in rats. Rafsky and Newman have described an apparent thiamine deficiency in aged persons on diets which are qualitatively quite adequate for young adults. Mills says that at his laboratory a group of rats has been followed from weaning time to old age, being tested periodically for their requirement of one B vitamin after another needed for optimal growth. The increase in thiamine requirement with advancing age in rats was further verified. None of the other B vitamins studied (choline, pyridoxine, riboflavin and pantothenic acid) gave evidence of similar increase in requirement with advancing age. The author concludes that these observations, in conjunction with studies on aged persons, provide reason to recommend thiamine supplementation for elderly persons.

American Practitioner, Philadelphia

2:*703-770* (July) 1948

Physiologic Therapy of Intractable Bronchial Asthma and Status Asthmaticus, Part II. A. L. Barach.—p. 703.
Malignant Hypertension. R. Birchall.—p. 713.
Cervical Disk Syndrome. A. Fields.—p. 724.
*Coronary Deaths in "Healthy" Young Soldiers: Clinicopathologic Study. N. E. Reich.—p. 731.
Cystinuria: Case Report. S. D. Ezell.—p. 748.
Untoward Reactions of Therapy with Gold. R. R. Kierland.—p. 750.
Hypodermic Needles Stored in Eye Droppers. C. B. Strauch.—p. 752.
Dermatitis Following Ingestion of Pyribenzamine. H. Rattner and J. Graffin.—p. 754.

Coronary Death in Young Soldiers.—Reich reports the occurrence of coronary death in 11 male soldiers between the ages of 22 and 38. The length of military service ranged from one month to forty-three months. Atherosclerosis was responsible for the fatal outcome in 10 cases, 2 of which revealed no thrombosis. One patient had coronary embolism with arteritis and septic thromboses of the smaller coronary branches. Overweight was a predisposing factor in 7 patients. Contrary to the classical description of onset at night, all the patients were attacked during the waking hours. In 6 the onset was unassociated with strenuous activity. Unusual prodromes due to the reflex symptoms referable to other systems, especially the gastrointestinal tract, accounted for the main difficulty in correct diagnosis. Although these patients had been examined on numerous occasions and were considered in good health, varying degrees of clinically undiagnosed cardiac enlargement were present in 6 of them at necropsy. When extra physical demands are made in war or heavy industry, it may be advisable to add electrocardiographic studies with oxygen deprivation tests to routine laboratory examinations for the earlier diagnosis of coronary insufficiency.

Annals of Allergy, Minneapolis

6:219-352 (May-June) 1948

Psychodynamics and Allergic Patient. H. A. Abramson.—p. 219.
Skin Tests with Endocrine Substances: Method of Zondek and Bromberg. R. L. Baer, V. H. Witten and J. R. Allen.—p. 239.
*Fever Due to Food Allergy. A. H. Rowe.—p. 252.
Mold Distribution in Air and Dust in Kentucky. Anna Newton, M. Scherago and R. H. Weaver.—p. 260.
Bacteriologic Studies of Multiple Sclerosis. E. C. Rosenow.—p. 271.
RH Factor in Immunologic Reactions. A. S. Wiener.—p. 293.
Clinical Evaluation of Neohetramine, a New Antihistamine. G. L. Waldbott and R. Borden.—p. 305.
*Dermatophytosis and *Fungus* Sensitivity. S. H. Jaros and M. H. Kirsner. —p. 307.
Paroxysmal Dyspnea: Case Report. H. S. Bernton.—p. 317.

Fever Due to Food Allergy.—Rowe directs attention to food allergy as one cause of unexplained fever. Failure to recognize food allergy as one cause of fever accounts for some unjustifiable diagnoses of idiopathic or psychogenic fever, subclinical tuberculosis, brucellosis or other questionable infections. It has led to unnecessary operations on tonsils, appendixes, gallbladders and pelvic organs. Needless surgical operations have been performed on nasal sinuses because of the association of fever with nasal congestion, blocking or postnasal mucus, and especially with swollen membranes or opacities in the antrums or other sinuses which were not due to infection but to allergy. The author reports the case of a girl, aged 18, who had prolonged allergic fever that was preceded by lifelong anorexia, aversion for milk, and recent colonic symptoms. Because of this fever, the patient was hospitalized for four and one-half months. During this time many laboratory and clinical investigations were conducted, and at one time a presumptive diagnosis of psychogenic fever was made. The relief from her fever, from the colonic and anal symptoms and from the fatigue and the other toxic symptoms by use of the elimination diet, and their subsequent reproduction by the ingestion of milk, prove that food allergy was responsible. Her initial colonic symptoms suggested the onset of a possible chronic ulcerative colitis, which, in the writer's opinion, is frequently due to food allergy. If the allergy had not been recognized, more definite tissue changes due to chronic ulcerative colitis might have developed. The most likely explanation of allergic fever is a disturbance in the temperature-regulating center of the brain by a localized or generalized allergic reaction.

Dermatophytosis and Fungus Sensitivity.—Jaros and Kirsner present immunologic evidence bearing on the close relationship between the sensitivity to fungus extracts in patients having a fungous infection. They treated patients with epidermophytoses and epidermophytid by means of a fungus extract containing Trichophyton gypseum, Trichophyton interdigitale, Epidermophyton inguinale and Monilia albicans in a dilution of 1:5,000. Since all these fungi do not interreact, a composite mixture had to be made in order to cover the most common causative fungus factors. Thirty patients are presented who were followed for a period of about a year. All had received previous local therapy. Etiologic organisms were cultured and identified. Each patient received a dose of 0.1 cc. of the extract intradermally twice a week. This schedule was attended by good results. In extremely sensitive patients, the extract was further diluted or a smaller dose given. In those who had improved greatly the interval between injections was increased to one week. In 2 patients an attempt was made to increase the dosage in order to shorten the course of therapy. It was found that if more than 0.2 cc. was injected intradermally, local necrosis would result, with the skin over the wheal sloughing off. No serious reactions were seen after injection, although there were occasional and temporary flaring up of the lesion, local reaction at the site of injection associated with a mild lymphadenitis and pruritus. More than 80 per cent of the patients were greatly improved or cured after this desensitization.

Annals of Internal Medicine, Lancaster, Pa.

29:1-220 (July) 1948

Modification of Fat Absorption in Digestive Tract by Use of Emulsifying Agent. C. M. Jones, P. J. Culver, Gladys D. Drummey and Anna E. Ryan.—p. 1.
Heart Failure: Relation of Symptoms and Signs to Its Severity and Duration. W. Dock.—p. 11.
Shoulder-Hand Syndrome in Reflex Dystrophy of Upper Extremity. O. Steinbrocker, N. Spitzer and H. H. Friedman.—p. 22.
Action of Neostigmine in Supraventricular Tachycardia. S. Waldman and L. Pelner.—p. 53.
*Observations on Use of Respirator in Refractory Status Asthmaticus. M. F. Reiser and E. B. Ferris Jr.—p. 64.
Treatment of Cardiovascular Syphilis. H. Eisenberg.—p. 71.
Management of Diabetes Mellitus: Analysis of Present-Day Methods of Treatment. H. O. Mosenthal.—p. 79.
*Prognostic Significance of "Guillain-Barré Syndrome." M. Hand and M. Rudoy.—p. 91.
*Meningitis Due to Pseudomonas Pyocyanea: Report of Three Cases Treated Successfully with Streptomycin and Sulfadiazine. L. Weinstein and T. S. Perrin.—p. 103.
Challenge of Preventive Medicine. J. S. Simmons.—p. 118.
Preliminary Report on Beneficial Effect of Chloromycetin in Treatment of Typhoid Fever. T. E. Woodward, J. E. Smadel, H. L. Ley Jr., R. Green and others.—p. 131.

Use of Respirator in Refractory Status Asthmaticus.—Reiser and Ferris used anesthesia and the Drinker respirator for artificial respiration in 3 patients with acute intractable asthma. Since expiration is primarily limited in asthma, it would appear that the best procedure for the maintenance of adequate ventilation would be to support this phase. This can be effectively accomplished by the use of the Drinker respirator which applies positive pressure to the chest wall and abdomen. Since the respirator also aids inspiration, inspiratory dyspnea is at the same time decreased. In each of the 3 cases, prompt and satisfactory relief of anoxemia was accomplished and maintained until bronchiolar spasm had undergone remission. One patient was treated early in the course of his attack and recovered uneventfully. The 2 others died, but the unfavorable outcome can be explained on the basis of complicating factors and need not to be regarded as indicating failure of treatment with the respirator. While no definite conclusion can be drawn from limited experience, it is felt that the rationale is sufficiently clear, and the results, so far as relief of anoxemia is concerned, are gratifying enough to warrant the use of the respirator in refractory status asthmaticus. It is of utmost importance that the therapy be instituted early in the course before irreversible changes have appeared, or other grave complications have had time to gain foothold. This maneuver is not suggested as a substitute for other well established methods of treatment, but rather as an adjunct in refractory cases.

"Guillain-Barré Syndrome."—Hand and Rudoy report 11 cases of polyneuritis observed in American soldiers abroad between the ages of 20 and 41, 10 of whom had a definite history of pharyngitis, which preceded the onset of neurologic disturbance by three to six weeks. All were characterized by diminution of motor power, reflexes and sensibility in the extremities. Accommodation and swallowing difficulties were common at the onset, and some urinary disturbances were noted. Elevation of the total protein content of the spinal fluid without increase of cells was present in every case. In 6 of the 11 patients an exacerbation of symptoms occurred after partial recovery. Two cases of polyneuritis in American civilians in New York, occurring one month after a severe sore throat in one case and in the other two months after pyodermia, had a similar course to that of the 11 soldiers. Five additional cases of polyneuritis in German prisoners of war are reported whose throat smears revealed the presence of diphtheria bacillus. In these patients the total protein of the spinal fluid was normal or only slightly elevated. Similarly in 4 additional German prisoners with polyneuritis associated with extraordinary ingestion of sulfonamide drugs over a long period there was no elevation of the total protein in the spinal fluid. Fever was not present in any of the cases in association with the neurologic disability, but was present in rare instances at the time of throat infection weeks before. Spontaneous pains or burning sensations occurred, but were not common in this series. Treatment consisted of bed rest, physical therapy from the onset of motor weakness, thiamine chloride 300 mg. daily, with a diet high in vitamins. Activity was permitted to the extent of the patient's capability. All the patients recovered and none was left with disabling residua. Minimal febrile reaction, symmetry of limb involvement and the occurrence of subjective and objective sensory changes differentiate the syndrome clinically from anterior poliomyelitis. The spinal fluid findings offer definite diagnostic evidence. Postdiphtheritic neuritis closely resembles the Guillain-Barré syndrome, as has been shown in the 5 cases of polyneuritis in the German prisoners with diphtheria bacilli. Differentiation depends on demonstration of diphtheria bacilli and on the relatively slight elevation of total protein in the spinal fluid. Etiologic relationship with throat infections such as tonsillitis, exudative pharyngitis of streptococcic or diphtheritic origin and pyemia is apparent. Sulfonamide drugs used in treatment of these primary infectious conditions may on occasion constitute the etiologic agents in the neurologic syndrome.

Meningitis Due to Pseudomonas Pyocyanea.—Weinstein and Perrin successfully treated 2 women aged 33 and 58 and a boy aged 16, who had primary meningitis due to Pseudomonas aeruginosa, with intrathecal and intramuscular streptomycin combined with sulfadiazine or sulfamerazine. In all the patients infection of the meninges occurred during the course of spinal anesthesia. The source of the organism could not be determined. The strains of Ps. aeruginosa responsible for the infection were sensitive to between 7.8 and 30 units of streptomycin per cubic centimeter and did not become resistant to the drug during treatment. Penicillin intrathecally was given a brief trial but was singularly ineffective. The sulfonamide drugs, used alone, also failed to control the meningeal infection, although temporary moderate improvement was produced by large doses. Streptomycin is indispensable for successful treatment of primary meningitis due to Ps. aeruginosa. Combined with sulfadiazine or sulfamerazine, it appears to be the treatment of choice. The total dose of streptomycin administered intrathecally varied from 1.8 Gm. to 8.1 Gm. and intramuscularly from 36.5 to 227 Gm. Two patients had from one to four relapses of the meningeal infection when treatment was stopped. These recurrences were accompanied by the presence of a variable number of red blood cells and occasionally by xanthochromia in the spinal fluid. Deafness occurred as a complication in all the patients, and 1 of them showed severe labyrinthine disturbance with complete loss of vestibular function. There was improvement in hearing in all the patients after discontinuation of the antibiotic therapy.

Archives of Neurology and Psychiatry, Chicago

59:273-444 (March) 1948

Organic Mental Syndrome with Phenomena of Extinction and Allesthesia. M. B. Bender, S. B. Wortis and J. Cramer.—p. 273.
Pallhypesthesia: Depression of Appreciation of Vibration in Trauma and in Disease; Preliminary Report. S. Goldblatt.—p. 292.
Psychosis Following Lobotomy in Case of Sexual Psychopathy: Report of Case. J. W. Friedlander and R. S. Banay.—p. 302.
Tensile Strength of Human Nerves: Experimental Physical and Histologic Study. C. T. Liu, C. E. Benda and F. H. Lewey.—p. 322.
Causes of Failure in Treatment with Electric Shock: Analysis of Thirty-Eight Cases. N. K. Rickles and C. G. Polan.—p. 337.
*Penicillin in Treatment of Neurosyphilis: IV. Tabes Dorsalis. L. P. Chesney and F. W. Reynolds.—p. 347.
Subdural Hematoma: Experimental Study. R. Cohn.—p. 360.
Distribution of Lesion of Brain Stem in Poliomyelitis. M. Barnhart, R. Rhines, J. C. McCarter and H. W. Magoun.—p. 368.
Peripheral Neuritis Complicating Multiple Myeloma. N. B. Kurnick and S. B. Yohalem.—p. 378.
Involutional Psychosis: Course when Untreated and when Treated with Electric Shock. P. E. Huston and Lillian M. Locher.—p. 385.
Electroencephalogram in Cerebrovascular Disease. H. Strauss and L. Greenstein.—p. 395.

Penicillin in Tabes Dorsalis.—Chesney and Reynolds treated 54 patients having tabes dorsalis with penicillin. Thirty-three of these received penicillin alone; 21, penicillin concurrently with therapeutic malaria. A comparison of the results with penicillin alone and those with malaria and penicillin indicates clearcut superiority for the combined therapy. Treatment with penicillin alone appears superior to therapy of the era before penicillin only in respect to its convenience and relative lack of toxicity. Concurrent administration of penicillin and therapeutic malaria is the most effective form of therapy for tabes dorsalis presently available.

Archives of Surgery, Chicago

56:259-444 (March) 1948

Fractures of Ankle: Analytic Historic Survey as Basis of New Experimental, Roentgenologic and Clinical Investigations. N. Lauge.—p. 259.
*Synthetic Resin—New Antacid for Treatment of Peptic Ulcer. M. Kraemer and L. H. Siegel.—p. 318.
Pseudotumor of Bone in Hereditary Pseudohemophilia. H. S. J. Walker and N. A. Womack.—p. 329.
*Is Chronic Cystic Mastitis a Precancerous Lesion? Ten Year Follow-Up Study of 26 Cases. H. L. Reed.—p. 338.
Nocturnal Gastric Secretion: Studies on Normal Subjects and on Patients with Duodenal Ulcer, Gastric Ulcer and Gastric Carcinoma. E. Levin, J. B. Kirsner, W. L. Palmer and Carrie Butler.—p. 345.
Surgical Approach to Hypertensive Vascular Disease: Technic of Operation, Discussion of Complications and Method of Prevention. H. G. Pretty.—p. 357.
*Treatment of Peptic Ulcer with Enterogastrone. H. M. Pollard, M. Block, W. H. Bachrach and Joyce Mason.—p. 372.
Peritoneal Reaction to Oxidized Cellulose. E. T. Dmytryk.—p. 386.
Application of Delayed Suture in Management of Wounds. K. F. Lowry.—p. 398.
Review of Urologic Surgery. A. J. Scholl, F. Hinman, A. B. Hepler and others.—p. 401.

Synthetic Resin for Peptic Ulcer.—Kraemer and Siegel used "amberlite IR IV" in 60 cases of peptic ulcer and find that it is just as satisfactory as the usually employed metallic salt antacids and has few of their disadvantages. It causes neither constipation nor diarrhea. Patients have taken from 2 to 9 Gm. of the drug daily for six to eight months with no evidence of toxicity. Damage to the gastric mucosa was not noted in 3 patients in whom the stomach was resected and in 3 on whom gastroscopy was performed. It approaches the ideal antacid in that it is not absorbed from the digestive tract, has no effect on the acid-base balance and does not alkalize the urine. It neutralizes acid rapidly and promptly relieves pain. It is effective in small dosage and is inexpensive and tasteless.

Is Chronic Cystic Mastitis A Precancerous Lesion?—Reed says that since 1925 many cases of chronic cystic mastitis have been studied at Wichita hospitals. Three types of chronic cystic mastitis can be distinguished histologically: (1) simple chronic cystic mastitis, (2) chronic cystic mastitis with papillary proliferation and (3) chronic cystic mastitis with atypia. Twenty-six patients with chronic cystic mastitis who were operated on prior to 1931 were selected for follow-up study. Twenty patients had simple chronic cystic mastitis, 2 had papillary proliferation and 4 had atypia. Local excision of the involved area was performed on 23 patients, while 3 were subjected to simple mastectomy. The patients were followed for ten to seventeen years after operation, and were recently examined. One patient died of cancer of the cervix ten years after, and another of pneumonia eleven years after the operation on the breast. In neither had there been a recurrence of chronic cystic mastitis or development of cancer in the breast prior to death. One patient had two local recurrences; the lesion was excised and showed the typical picture of simple chronic cystic mastitis. During the twelve years which have followed her last operation no tumor had reappeared. The remaining 23 patients of the series are completely cured after the local excision. Carcinoma of the breast did not develop in a single instance.

Treatment of Peptic Ulcer with Enterogastrone.—Pollard and his associates treated 28 patients having peptic ulcer with enterogastrone. Twelve patients were given enterogastrone orally in doses of 8 to 16 Gm. daily for periods up to eleven months. Recurrence of typical symptoms of ulcer occurred in 2 of these patients while they were under treatment. Sixteen patients with peptic ulcer were given intramuscular injections of 200 mg. of enterogastrone daily for periods up to nine months. Three of the patients had either recurrence or persistence of symptoms while under treatment. Roentgenograms of the upper part of the gastrointestinal tract were available for 17 of the 28 patients from the start of therapy. The roentgenologic appearance of the lesion after therapy was improved in 6 patients, remained unchanged in 8 and was definitely worse in 3 patients. Single intramuscular injections of 200 and 500 mg. of enterogastrone in persons with peptic ulcer produced no changes in the volume of fasting gastric secretion, output of hydrochloride acid, pepsin concentration or gastric motility. Daily administration of enterogastrone orally or parenterally for periods up to eleven months to persons with peptic ulcer caused no significant alterations in the volume of fasting gastric secretion, volume of hydrochloric acid, pepsin concentration or type of response to a caffeine test meal. This was true whether there was evidence that the ulcer improved, remained stationary or became worse.

California Medicine, San Francisco

68:407-520 (June) 1948. Partial Index

Syphilis in Pregnancy. C. W. Barnett.—p. 432.
Incidence of Unsuspected Urinary Tract Infection in Selected Group of Ambulatory Women. R. H. Barr and L. A. Rantz.—p. 437.
Treatment of Urinary Tract Infections. S. Olsen.—p. 440.
Medical Treatment of Urinary Tract Infection. C. A. Noble Jr.—p. 443.
Torsion of Testicle. L. Kindall and T. T. Nickels.—p. 446.

Cancer, New York

1:1-176 (May) 1948

*Sarcoma Arising in Irradiated Bone: Report of 11 Cases. W. G. Cahan, Helen Q. Woodard, N. L. Higinbotham, and others.—p. 3.
Fibrosarcoma: Malignant Tumor of Fibroblasts. A. P. Stout.—p. 30.
Lymphangiosarcoma in Postmastectomy Lymphedema: Report of 6 Cases in Elephantiasis Chirurgica. F. W. Stewart and N. Treves.—p. 64.
Evolution of Cancer of Uterine Fundus in Rabbit. H. S. N. Greene and B. L. Newton.—p. 82.
Electrophoretic Studies on Plasma Proteins of Patients with Neoplastic Disease. Mary L. Petermann and Katherine R. Hogness.—p. 100.
Conversion of Cancer-Resistant to Cancer-Susceptible Strain of Mice by Chemical Means. L. C. Strong.—p. 120.

Sarcoma in Irradiated Bone.—Cahan and his associates point out that whereas twenty years ago radium and roentgen rays were used widely on benign and malignant tumors, either before or after operation, or both, or as the sole method of treatment, with the passage of time and the accumulation of experience the concept of the place held by irradiation in the treatment of neoplasms of bone has changed. The authors have inclined toward the belief that roentgen or radium treatment is inadvisable for benign tumors of bone. Their reasons were that surgical treatment yields more satisfactory results, that they avoid the risk of irradiating a malignant tumor under the mistaken impression that it is benign, that many of these benign lesions are either radioresistant or only slightly radioresponsive, that in children, prior to epiphysial closure, irradiation of lesions in the vicinity of growth centers may cause serious disturbances in bone growth and that an extremely serious sequel of radiation therapy is courted: there is the possibility that, after an interval of years, bone sarcoma may develop at the site of the previous irradiation. The authors summarize the literature dealing with both experimental and clinical production of bone sarcoma by irradiation and describe 11 cases in which bone sarcoma developed at a period considerably subsequent to irradiation of benign bone tumors or of normal bone.

Cancer Research, Baltimore

7:669-740 (Nov.) 1947

Propagation of Filtrable Agents Producing Lymphoid Tumors and Osteopetrosis by Serial Passage in Chickens. B. R. Burmester and G. E. Cottral.—p. 669.
Mast Cell Reaction of Mouse Skin to Some Organic Chemicals. L. G. Larsson and B. Sylvén.—p. 676.
Mast Cells in Experimental Rat Sarcomas. H. Holmgren and G. Wohlfart.—p. 686.
Pigmented Precancerous and Cancerous Changes in Skin. V. R. Khanolkar.—p. 692.

Florida Medical Association Journal, Jacksonville

35:1-64 (July) 1948

Fenestration Operation for Otosclerosis: Analysis of One Hundred Cases. J. B. Farrior.—p. 17.
Cancer Control in Florida. W. T. Sowder.—p. 23.
Specific Treatment of Pollinosis. G. E. Henson.—p. 28.

Gastroenterology, Baltimore

10:923-1056 (June) 1948

Study of Gastric Mucosa in Various Diseases Affecting Upper Part of Gastro-Intestinal Tract. W. C. Meyers.—p. 923.
Variability and Periodicity of Nocturnal Gastric Secretion in Normal Individuals. E. Levin, J. B. Kirsner, W. L. Palmer and Carrie Butler.—p. 939.
*Comparison of Nocturnal Gastric Secretion in Patients with Duodenal Ulcer and in Normal Individuals. E. Levin, J. B. Kirsner, W. L. Palmer and Carrie Butler.—p. 952.
Burning Sensation of Tongue (Glossodynia): Analysis of Cases That are not Due to Vitamin B Deficiency. S. Waldman and L. Pelner.—p. 965.
Partial Gastrectomy: Clinical, Gastroscopic and Radiologic Considerations. M. Paulson and E. S. Glasden.—p. 970.
Gastroscopy Under Pentothal-Curare Anesthesia. S. J. Stempien and W. W. Greene.—p. 978.
Evaluation of Reliability of Certain Blood Vitamin Assays in Determining Dietary Adequacy. G. H. Laing, F. W. Jones, Dolores Anderson and J. M. Beazell.—p. 982.
Influence of Anti-Oxidative and Dispersing Agents of Vitamin A Absorption: Therapeutic Implications in Endogenous Hypovitaminemia. A. H. Popper and Hattie A. Dyniewicz.—p. 987.
Study of Vitamin A and Carotene Tolerance Tests in the Aged. H. A. Rafsky and B. Newman.—p. 1001.
Effect of Tetraethylammonium Chloride on Gastric Motility in Man. D. C. Dodds, C. L. Ould and M. E. Dailey.—p. 1007.
Recurrence of Regional Terminal Ileitis Associated with Pregnancy: Case Report. E. C. Raffensperger.—p. 1010.
Ulcerating Carcinoma of Sigmoid: Report of Case with Unusual Roentgen Picture M. Feldman, M. E. Gann and T. Weinberg.—p. 1018.

Nocturnal Gastric Secretion.—In a previous publication Levin and his collaborators reported the results of studies on the nocturnal gastric secretion in normal persons. They now compare the data obtained in patients with active duodenal ulcer with the findings in normal subjects. They found that the volume, concentration and output of acid in the fasting nocturnal gastric secretion are usually higher in patients with duodenal ulcer than in normal persons. The volume of secretion and output of acid are usually higher during the first half of the night than during the last half. Individual variations exist. Patients with duodenal ulcer with a high volume and secretion of acid on one night in the vast majority of instances manifest a high volume and acidity on successive nights. The rate of gastric secretion is not constant, varying spontaneously from hour to hour in the same person. These variations must be taken into account in the evaluation of preparations and procedures designed to reduce gastric secretion.

Geriatrics, Minneapolis

3:197-266 (July-Aug.) 1948

Old Age: Last Stand of Tubercle Bacillus. J. A. Myers.—p. 197.
Coronary Artery Disease in Older Patients. G. F. Greco.—p. 211.
Rheumatism in the Aged. W. K. Ishmael.—p. 217.
Pentothal Sodium in the Aged with Respect to Eye Surgery. W. E. Froschauer and C. E. Schrimpf.—p. 231.
Old Age Security in Other Societies. L. W. Simmons.—p. 237.
Social and Preventive Geriatrics: Survey of Medico-Social Problems Connected with Health and Illness in Later Life. J. W. Affleck.—p. 245.

Indiana State Medical Assn. Journal, Indianapolis

7:677-780 (July) 1948

Recent Developments in Treatment of Brucellosis. D. L. Urschel.—p. 695.
Vagus Nerve Resection (Vagotomy) in Treatment of Acute Perforated Duodenal Ulcer: Report of Case. D. C. Straus.—p. 700.
Anesthesia for Patients with Disease of Cardiovascular System. W. B. Adams.—p. 703.
Ambulatory Proctology. E. L. Fitzsimmons.—p. 707.
Medical Rehabilitation Service in Veterans Administration. D. A. Covalt.—p. 716.

Journal of Aviation Medicine, St. Paul

19:137-220 (June) 1948

Etiology of Pulmonary Hemorrhage in Cats Exposed to Abrupt Deceleration. R. K. McDonald, V. C. Kelley and R. Kaye.—p. 138.
Effects of Angular Acceleration and Centrifugal Force on Nonvisual Space Orientation During Flight. K. MacCorquodale.—p. 146.
Aviator's Vertigo. W. E. Vinacke.—p. 158.
Quantitative Histochemical Changes in Adrenal Following Exposure to Anoxia. J. Nichols.—p. 171.
Certain Pharmacologic Properties of Alcohol, Nicotine and Caffeine. O. Horwitz.—p. 179.
Relationship Between Certain Aspects of Physical Fitness and Success in Pilot Training. B. E. Phillips.—p. 186.
*Studies on Removal of Gas from Colon by Oxygen Inhalation. R. S. Pogrund and F. R. Steggerda.—p. 204.
Cumulative Record of Naval Aviator Proficiency. H. E. Page.—p. 211.

Removal of Gas from the Colon by Oxygen Inhalation.—Pogrund and Steggerda point out that high blood tension of nitrogen retards the absorption of this gas from the colon, thus evolving a problem of interest to aviation physiologists; namely, the expansion of this unabsorbable gas in the intestinal tract resulting during high altitude flying. The authors studied the effect of lowering the nitrogen tension in the blood on the absorption of nitrogen from the colon by introducing 500 cc. of nitrogen into the colons of normal healthy male adult subjects. With the subjects resting, the percentage volumes of gas recovered at the end of two hours were noted, while the subjects breathed either room air (to serve as controls) or pure oxygen (to comprise the experimental study). On the basis of their observations the authors conclude that the beneficial effect of oxygen inhalation on abdominal distension is explained by the removal of nitrogen from the blood under these conditions, thereby producing a partial pressure gradient favorable for the absorption of nitrogen from the gastrointestinal tract.

Journal of Bacteriology, Baltimore

56:1-142 (July) 1948

Biochemical Mutants of Bacterial Viruses. M. Delbrück.—p. 1.
Nutrition of Brucellae: Growth in Simple Chemically Defined Media. P. Gerhardt and J. B. Wilson.—p. 17.
Studies on Anaerobic Micrococci. E. L. Foubert Jr. and H. C. Douglas.—p. 25.
Effect of Human Serum on Dilution Bioassay of Penicillins G, X and K. H. Eagle and H. A. Tucker.—p. 59.
*Origin of Bacterial Resistance to Antibiotics. M. Demerec.—p. 63.
Action of Penicillin on Staphylococcus: Further Observation on Effect of Short Exposure. R. F. Parker and Sarah Luse.—p. 75.
Pancreatic Digest Chocolate Blood Agar for Isolation of Gonococcus. Marie L. Koch.—p. 83.
Growth of Coli-Aerogenes Group in Presence of Isocitrate. S. A. Koser and G. J. Kasai.—p. 89.
Factors Influencing Production of Tetanus Toxin: Gaseous Products of Growth. J. H. Mueller, Pauline A. Miller and E. M. Lerner.—p. 97.
Cytochemical Mechanisms of Penicillin Action: VII. Effects on Activity of Alkaline Phosphatase. Jean Dufrenoy and R. Pratt.—p. 99.
Influence of Certain Substances on Activity of Streptomycin: III. Differential Effects of Various Electrolytes on Action of Streptomycin. R. Donovick, A. P. Bayan, P. Canales and F. Pansy.—p. 125.
Inhibiting Effect of Normal Serum and Its Gamma Globulin Fraction on Variation of Staphylococcus Aureus. B. F. Hoerlein.—p. 139.

Origin of Bacterial Resistance to Antibiotics.—Demerec offers evidence that bacterial resistance to penicillin and streptomycin is not induced by these compounds but originates spontaneously through genetic changes comparable to gene mutations. He describes resistance patterns observed in experiments with penicillin and streptomycin and outlines a possible mechanism responsible for resistance and for the differences between the resistance patterns observed with penicillin and those observed with streptomycin. The experiments were done in vitro. Penicillin was tested with Staphylococcus aureus, strain NRRL 313, and streptomycin was tested with the same strain of Staph. aureus and with Escherichia coli, strain B. From the knowledge gained the author concludes that in treatment with penicillin the development of highly resistant strains can be avoided by *application of penicillin in doses sufficiently large to prevent* survival of first step resistant mutants. In treatment with streptomycin, however, the development of highly resistant strains cannot be prevented; effective treatment does not eliminate all bacteria, but it probably reduces their number to a level at which the organism is able to eliminate them.

Journal of Clin. Endocrinology, Springfield, Ill.

8:423-498 (June) 1948

Spontaneous and Experimentally Induced Uptake of Radioactive Iodine in Metastases from Thyroid Carcinoma: Preliminary Report. S. M. Seidlin, E. Oshry and A. A. Yalow.—p. 423.

Ageing in Apparently Normal Men: I. Urinary Titers of Ketosteroids and of Alpha-Hydroxy and Beta-Hydroxy Ketosteroids. H. B. Hamilton and J. B. Hamilton.—p. 433.

Experimental Alteration of Human Ovarian Cycle by Estrogen. W. E. Brown, J. T. Bradbury and A. F. Jennings.—p. 453.

Effect of Low Dosage Roentgen Radiation on Gonadotropic Function of Hypophysis of Mature and Immature Female Albino Rat. J. H. Freed, E. J. Farris, D. P. Murphy and E. P. Pendergrass.—p. 461.

Myxedema with Delayed Closure of Epiphyses in Sexually Mature Women. J. C. M. Fournier, J. C. Barsantini and H. C. Bazzano. —p. 482.

Urinary 17-Ketosteroid Levels of Human Leukemic Subjects. L. Levin. —p. 487.

8:499-636 (July) 1948

*Adrenal Cortical Tumor Associated with Cushing's Syndrome: Report of Case with Metabolic Studies and Remarks on Pathogenesis of Cushing's Syndrome. E. J. Kepler, R. G. Sprague, O. T. Clagett and others.—p. 499.

*Thyrotoxicosis Factitia (Alimentary Thyrotoxicosis): Its Differentiation from Spontaneous Thyrotoxicosis with Aid of Radioactive Iodine. B. N. Skanse and D. S. Riggs.—p. 532.

Hormonal Factors Involved in Regulation of Basal Body Temperature During Menstrual Cycle and Pregnancy. C. L. Buxton and W. B. Atkinson.—p. 544.

Cause of Physiologic Basal Temperature Changes in Women. M. E. Davis and N. W. Fugo.—p. 550.

Fluorometric Method for Clinical Determination of Estrone and Estradiol. J. W. Jailer.—p. 564.

Metabolic Studies in Cushing's Syndrome.—Kepler and his co-workers report a case of adrenal cortical tumor associated with Cushing's syndrome in a woman aged 26. The patient presented hypertension and "hypokalemic," hypochloremic alkalosis. Urinary excretion of both 17-ketosteroids and estrogenic substances was increased to abnormally high levels. Remission of the symptoms followed the removal of the tumor. Recurrence of the tumor was accompanied by the reappearance of the clinical picture. Removal of the recurrent tumor was followed by a temporary and incomplete remission of symptoms. Recurrence of the tumor and the appearance of metastatic lesions in the lungs were associated with the symptoms that were present prior to the removal of the tumor. Roentgen therapy was ineffective. Necropsy revealed that the anterior lobe of the pituitary contained two small chromophobe tumors; Crooke's changes were observed to be present in the basophilic cells of the anterior lobe. The hypothalamus appeared normal. The tumor had recurred locally and had metastasized to the lungs. The contralateral adrenal cortex was atrophic. Metabolic studies were conducted before the first operation and shortly thereafter. Under the conditions employed, the over-all nitrogen balance before operation was negative. Creatinine was present in the urine. Potassium was lost from the body and sodium was retained when the potassium content of the diet was kept at a low level. Administration of potassium chloride tended to correct the alkalosis, the negative balances for potassium and nitrogen and the positive balance for sodium. After removal of the tumor, nitrogen, sodium, potassium and chloride all were retained in large amounts, and creatinuria practically disappeared. The amount and p_H of the urine decreased postoperatively. The metabolic data suggested that the functioning adrenal tumor caused loss of muscle and deposition of fat and that its removal was followed by loss of fat and deposition of muscle. The question of the adrenal versus the pituitary theory of Cushing's syndrome is still open. If the condition is characterized regularly by a high concentration of adrenotropic substance in the blood and urine, one might well conclude that among the endocrine organs the anterior lobe of the pituitary body is primarily at fault. If the administration of adrenal steroids which affect the metabolism of protein and carbohydrate, should be followed in experimental animals by the appearance of Crooke's changes or basophilic tumors or both in the anterior lobe of the pituitary body, it would seem that the adrenal cortices are primarily at fault and that the pituitary abnormalities are secondary and could be ignored therapeutically.

Factitial Thyrotoxicosis.—Skanse and Riggs report a case of factitial thyrotoxicosis in a woman aged 37 in whom hyperthyroidism developed due to clandestine ingestion of thyroid, and a second case in a woman aged 40 in whom circumstantial evidence strongly favored the same diagnosis. In both patients the clinical picture was indistinguishable from that of endogenous thyrotoxicosis. The differential diagnosis was facilitated by the use of tracer doses of radioactive iodine. In endogenous thyrotoxicosis the urinary excretion of radioactive iodine is low compared to that of euthyroid persons. In factitial thyrotoxicosis the excretion of radioactive iodine is higher than normal. Since the serum protein-bound iodine is elevated independently of the source of iodine-containing hormone, this test is not contributory to the differential diagnosis. The combination of an elevated serum protein-bound iodine and high urinary excretion of radioactive iodine is characteristic of, but is not by itself pathognomonic of, alimentary thyrotoxicosis. In a patient with endogenous thyrotoxicosis treated with either thiouracil or iodide one may find the same laboratory pattern until the disease is brought under control. Previous cholecystograms might be responsible for the fact that thyrotoxic patients occasionally have a high excretion of radioactive iodine.

Journal Industrial Hygiene & Toxicology, Baltimore

30:211-264 (July) 1948

Measurement of Alpha-Active Dust in Atmosphere. H. Carmichael and P. R. Tunnicliffe.—p. 211.

Skin Lesions in Persons Exposed to Beryllium Compounds. R. S. Grier, P. Nash and D. G. Freiman.—p. 228.

Aerobacter Cloacae Endotoxin as Possible Factor in Etiology of Bagassosis. R. Schneiter, W. H. Reinhart and Barbara H. Caminita.—p. 238.

Apparatus for Dispensing Aluminum Dust in Treatment of Silicotics. F. W. Church and F. R. Ingram.—p. 246.

Effects of Physical Characteristics of Fabrics on Physiologic Heat Load and Subjective Reactions. W. R. Christensen.—p. 251.

Penetration of Lead Through Skin. E. P. Laug and Frieda M. Kunze. —p. 256.

Skin Lesions Caused by Beryllium Compounds.—The following types of cutaneous lesions have been observed in those who came in contact with beryllium compounds: contact dermatitis, ulcer of the skin and lesions arising spontaneously in patients with the chronic type of pulmonary disease. To these should be added subcutaneous granuloma occurring in persons who cut themselves on fluorescent lamps coated with beryllium-containing phosphor. The first of the 3 cases reported by Grier and his associates was of a boy, aged 12, who was cut on the side of the neck when he hit an old fluorescent lamp. The other 2 cases concerned men who worked in fluorescent lamp factories and who were accidentally cut with a piece of a lamp. The subcutaneous granulomas which developed in these 3 *patients represent distinct form of tissue reaction to beryllium.* Pathologically, these granulomas are similar to that seen in the cutaneous lesions which have arisen in the course of the pulmonary granulomatosis caused by beryllium. A similar epithelioid cell reaction has also been found in the lungs of workers who have died of pulmonary granulomatosis following exposure to beryllium compounds. In such cases beryllium has been detected spectroscopically in amounts of the same order of magnitude as was found in the subcutaneous granuloma of case 1. The histology of these granulomas may resemble cutaneous and subcutaneous sarcoidosis so closely that, in some instances, the diagnosis may be missed without a history of exposure to beryllium or determination of beryllium in the tissue. Usually, however, the lesions associated with beryllium show foci of necrosis of a type not seen in sarcoidosis, and the laminated inclusion bodies seem to occur in the former with greater frequency. The incidence of subcutaneous granulomas among those who cut themselves on these lamps is not known, but by analogy with pulmonary granulomatosis, which in one series occurred in 6 per cent of those exposed, it seems likely that in only a few such persons will granulomas develop.

Journal-Lancet, Minneapolis

68:259-296 (July) 1948

Tendon Graft Replacement of Finger Flexors. R. E. Van Demark.—p. 259.
Analysis by Decades of Morbidity and Mortality Trends in Northwest Central Area: One Year's Report of Autopsy Findings (June 1, 1946 to May 31, 1947). G. Berdez and J. J. McLeod Jr.—p. 262.
Study of 1946 Poliomyelitis Epidemic by New Bacteriologic Methods. E. C. Rosenow.—p. 265.
Causes of Error in Proctologic Diagnosis and Treatment. W. A. Fansler.—p. 278.
Streptomycin in Treatment of Various Tuberculous Conditions: Report on Its Use in Minneapolis Veterans Administration Hospital. W. B. Tucker.—p. 282.

Journal National Malaria Society, Columbia, S. C.

7:85-166 (June) 1948. Partial Index

Ronald Ross as Medical Discoverer and Poet. R. L. Mégroz.—p. 85.
Temporary Dewatering in Applying Deepening and Filling to Permanently Eliminate Mosquito Breeding Areas in Tennessee Valley Authority Impounded Reservoirs. B. R. Simms and C. C. Kiker.—p. 100.
Duration of Immunity to Malaria (Plasmodium Cathemerium) in Canary. W. D. Gingrich.—p. 109.
Reactions Observed During Treatment with Pentaquine, Administered with Quinacrine (Atabrine), Metachloridine (SN-11,437) and with Sulfadiazine. J. A. Atchley, E. H. Yount, J. R. Husted and others.—p. 118.
Studies on Imported Malarias. D. E. Eyles, M. D. Young and R. W. Burgess.—p. 125.
Observations on Duration of Toxicity of DDT to Anopheles Quadrimaculatus Say Under Field Conditions. A. A. Weathersbee, F. T. Arnold Jr. and J. P. Hopkins.—p. 138.
Effect of One Plant Extract and of Certain Drugs on Development of Plasmodium Gallinaceum in Aedes Aegypti. H. A. Johnson and H. Akins.—p. 144.

Journal of Nervous and Mental Disease, New York

108:1-90 (July) 1948

Psychiatric Aspects of Spontaneous Hypoglycemia. Margaret Bass and P. L. Giovacchini.—p. 1.
Effect Syndrome and Low Back Pain. J. C. Moloney.—p. 10.
*Aldarsone and Bismuth Combined in Treatment of Neurosyphilis: Report of One Hundred Cases. H. Eisenberg and A. S. Hershfield.—p. 25.
*Herniated Disk Simulating Cord Tumor. F. Kennedy, B. Hyde and S. Kaufman.—p. 32.
Clinical Studies of Psychoses in Navy: I. Predication Values of Social Histories and Harrower-Erickson Test. C. K. Aldrich and Mabel Coffin.—p. 36.
Spinal Fluid Sugar in Subarachnoid Hemorrhage. M. J. Madonick and N. Savitsky.—p. 45.
Psychotic Reactions Among Soldiers of World War II. S. Paster.—p. 54.
Painful Hemiplegia Consideration of Central Pain. A. Gordon.—p. 67.

Phenarsone Sulfoxylate and Bismuth in Neurosyphilis.—Eisenberg and Hershfield report on the new pentavalent arsenical, phenarsone sulfoxylate ("aldarsone") in the treatment of neurosyphilis in patients who had previously received various types of treatment, including long term chemotherapy, fever and penicillin, without improvement in their symptoms and spinal fluid findings. All these patients, because of physical contraindications and other reasons, were unable to receive the benefits of further fever therapy. The authors say that 100 patients with various types of neurosyphilis received 2,400 injections of phenarsone sulfoxylate and bismuth compound, concurrently, 1 Gm. of phenarsone sulfoxylate and 1 cc. of bismuth salicylate (2 Gm., equivalent to 75 mm. metallic bismuth). Both drugs were given over a period of twenty-four weeks, once a week, without interruptions. There were 41 cases of asymptomatic and 59 cases of symptomatic neurosyphilis. The Eagle-Wassermann reactions became negative in the spinal fluid in 12 of the 100 patients, and an additional 58 showed a reduction in titer of the Eagle-Wassermann reactions. Fifteen of the patients showed a negative colloidal gold curve and 51 others showed a decrease in the colloidal gold curve. No toxic reactions were noted in any of the cases during or after the treatment. The authors conclude that the concurrent administration of phenarsone sulfoxylate and bismuth is a safe ambulatory treatment of neurosyphilis.

Herniated Disk Simulating Cord Tumor.—Kennedy and his associates direct attention to the fact that herniated nucleus pulposus may simulate a tumor of the spinal cord. They report 3 patients with clinical features of a cord tumor, but operation revealed a herniated nucleus pulposus. In the first and second of the 3 patients the preoperative diagnosis was tumor of the cauda equina. Nothing in the history of the first patient suggested the possibility of a herniated nucleus pulposus. In the second case a review of the history should have suggested the correct diagnosis. The patient had pain, weakness, sensory and reflex changes which vanished in a month, only to return about one year later. In the third case the diagnosis was the same preoperatively and postoperatively, although tumor of the cord had to be seriously considered. The history of intermittent pain for five years suggested the possibility of a herniated nucleus pulposus which may have been partially and intermittently extruded.

J. Neuropathology & Exper. Neurology, Baltimore

7:235-348 (July) 1948

Chronic Experimental Allergic Encephalomyelitis in Monkeys. A. Ferraro and C. L. Cazzullo.—p. 235.
Alterations in Structure of Nerves Caused by Restricting Their Growth with Ligatures. D. Duncan.—p. 261.
Pyridoxine and Pantothenic Acid Deficiency in Swine. R. L. Swank and R. D. Adams.—p. 274.
Granuloblastoma, Primary Neuroectodermal Tumor of Cerebellum. Andrea Saccone and J. A. Epstein.—p. 287.
Angioblastic Neoplasms of Brain. E. W. Corradine and J. Browder.—p. 299.
Experimental Allergic Encephalomyelitis. G. A. Jervis and H. Koprowski.—p. 309.
Posttraumatic Cerebral Swelling Resulting in Cyst Formation. I. M. Scheinker and L. H. Segerberg.—p. 321.
Relation of Changes in Brain to Those in Skull of Crouzon's and Similar Diseases; with Report of Case. Dorothy Eshbaugh.—p. 328.

Journal of Pediatrics, St. Louis

33:1-140 (July) 1948

Effect of Oral Feeding at Different Levels on Absorption of Foodstuffs in Infantile Diarrhea. A. W. Chung.—p. 1.
Effect of Early Oral Feeding Versus Early Oral Starvation on Course of Infantile Diarrhea. A. W. Chung and B. Viščorová.—p. 14.
Simple Formula for Premature and Full-Term Infants. F. H. Adams.—p. 23.
*Prospects for Prevention of Chronic Bronchitis and Bronchiectasis: Rational Management of Bronchopulmonary Infections by Penicillin Aerosol Therapy. W. Finke.—p. 29.
*Early Whooping Cough Immunization. S. R. Halpern and Doris Halpern.—p. 43.
Heart Disease in San Francisco School Children: 1947 Registry Showing Incidence, Problems, and Supervision Technics. S. J. Robinson, Dorothy M. Aggeler and Gladys Taylor Dariloff.—p. 49.
Further Experience with Hypoxia Tolerance Test of Heart in Children. E. Mannheimer, L. E. Carlgren and W. Graf.—p. 58.
*Congenital Toxoplasmosis. J. Schwartzman, A. Maffia, Margaret E. Crusius and A. Brunhoffer.—p. 66.
Treatment of Tuberculous Meningitis. L. Alperin and J. A. Toomey.—p. 74.
Importance of Pediatric and Surgical Care in Prevention of Selective Service Rejections. W. H. Davis, Jr. and J. M. Arena.—p. 85.

Prevention of Chronic Bronchitis and Bronchiectasis.—A follow-up by Finke on 50 children between the ages of 2 and 15 who were hospitalized in 1945 for bronchopneumonia and treated with sulfonamide drugs and/or parenteral penicillin revealed that 16 of the patients presented symptoms and frequently definite signs of subacute or chronic bronchopulmonary infection two years later. About half of these 16 children had sought medical advice during these two years or had been hospitalized for more severe relapses. Twenty-four others of the 50 children had been affected since their hospitalization in 1945 by relatively mild but recurrent respiratory episodes diagnosed as grip and cold. Thus, only 10 children of the whole group had remained free from respiratory symptoms during the two years following their bronchopneumonia. These observations indicate the potentially recurrent and chronic character of a condition generally misinterpreted as an acute illness. The prospects for prevention of chronic bronchitis and bronchiectasis depend largely on recognition and eradication of the initial bronchopulmonary infection at the earliest possible stage. Penicillin aerosol treatment seems the best available method for achieving the latter. Observations on 15 children with subacute and chronic bronchopulmonary infection treated with penicillin aerosol showed that in patients with early infection the respiratory symptoms usually subsided within a week. Clinical findings indicative of tracheobronchitis disappeared after one to two weeks' treatment; resolution of a subacute bronchopneumonic process took place in one to two months. With continued treatment the accomplished improvement of both the respiratory infection and the general condition became more and more obvious. The follow-up method used in rheumatic fever and tuberculosis should be applied also to children with potential bronchiectasis in order to give undelayed treatment in the case of a relapse, before it adds new damage to the respiratory system. The prognosis for arrest of definitely chronic cases by penicillin aerosol therapy is less favorable, but encouraging results have been obtained by this new method even in children with pulmonary fibrosis and emphysema.

Early Whooping Cough Immunization.—The Halperns used whooping cough immunization with an alum-precipitated vaccine containing 40 billion organisms per cubic centimeter given in doses of 0.2 cc., 0.3 cc. and 0.5 cc. at monthly intervals in 175 infants of one month of age or less. The first 117 infants receiving skin and agglutination tests prior to the first injection of whooping cough vaccine served as controls. All infants had the skin and agglutination test performed three to four months after the last whooping cough injection. The use of the alum-precipitated vaccine proved to be an effective immunologic procedure as judged by clinical, serologic and skin tests. Reactions were minimal and absences uncommon. If the proper technic is used in administering the vaccine, abscess can be eliminated. The agglutinogen skin test and the rapid slide agglutination method showed a high degree of correlation. The skin test is a simple, reliable and effective method for determining immunity following immunization against pertussis.

Congenital Toxoplasmosis.—Schwartzman and his co-workers report a case of congenital toxoplasmosis in a 17 month old Negro girl. Microcephalus, chorioretinitis, diffuse cerebral calcification and mental deficiency were present. Dwarfism was noted for the first time in this condition. Blood was obtained for inoculation into mice and rabbits, but no toxoplasma was found. Spinal fluid was also injected into these animals, but again no evidence of the parasite was detected. Reactions to neutralizing antibody tests done on the infant's blood were negative. In late cases toxoplasma may not be isolated, and a negative reaction to a neutralizing antibody test after the fourth week of illness does not nullify the diagnosis. Since cases of toxoplasmosis arise as a result of placental transmission, prophylaxis would depend on the early diagnosis of the condition in the pregnant mother. The problem presenting itself is that of devising a simple diagnostic test and also of securing an effective therapy to eliminate the infection before it has produced permanent changes. The discovery of toxoplasma as a cause of mental deficiency and encephalomyelitis adds another causative agent to be considered in these conditions.

Maine Medical Association Journal, Portland

39:143-186 (June) 1948

Treatment of Acute Complications of Diabetes. G. G. Duncan.—p. 143.
Resection of Vagus Nerves in Treatment of Peptic Ulcer. S. F. Fox.—p. 149.

39:187-216 (July) 1948

The Old and the New in Medicine. S. A. Cobb.—p. 187.
The Psychosomatic Patient. M. E. Witte.—p. 190.
*New Ideas on Skin Tests for Food Allergies: Abuses of These Tests in Skin Diseases. L. Babalian.—p. 194.
"Intra-Abdominal Hemorrhage from Rupture by Pregnancy, in Stump of Amputated Fallopian Tube." A. A. Morrison.—p. 196.

Abuse of Skin Tests in Food Allergies.—Babalian shows that the technic of scratch or intradermal tests for food allergies is based on questionable hypotheses. He discusses some of these hypotheses and shows that neither in eczematous dermatitis nor in urticarial lesions are intradermal tests of value in detecting food allergy. As a result of the mistaken confidence in these tests, disorders have been mistakenly regarded as due to food allergy, when they were due either to malnutrition, infection or contact dermatitis. Confidence in skin tests for food allergy has had the unfortunate result that food allergies are regarded as common, which in reality they are not; they are rare in adults and children after the sixth year. Skin tests are of value in other forms of allergy. The importance of contact dermatitis is recognized more and more. Many eczemas formerly regarded as caused by food are now recognized as contact dermatitis.

Medical Annals of District of Columbia, Washington

17:371-428 (July) 1948

*Operative Treatment of Acute Subdeltoid Bursitis with Calcification. P. O. Pelland and W. Hoffman.—p. 371.
Needle Biopsy of Liver: Its Value in Clinical Medicine. I. B. Brick.—p. 377.
Use of Vaginal Cream Containing 9-Aminoacridine in Treatment of Mycotic Vaginitis. L. V. Dill and Shirley S. Martin.—p. 389.
Nitrogen Mustard Therapy of Lymphosarcoma: Report of Case. F. J. Eichenlaub and Matthew A. Olivo.—p. 391.
Use of Methyl-iso-octenylamine (Octin) in Migraine and Related Headaches: Preliminary Report. A. Seltzer.—p. 395.

Subdeltoid Bursitis with Calcification.—Pelland and Hoffman advocate the surgical approach to the treatment of acute subdeltoid bursitis with calcification. The procedure employed is extremely simple, rapid and dramatic in its effect, has not been followed by recurrence and appears to avoid the development of chronicity which occasionally occurs with other methods. It consists in (1) the evacuation of the bursa through an incision not more than 3 cm. long and frequently less, and (2) the exploration of the musculotendinous rotator cuff of the shoulder through the floor of the bursa. The presence of pains and the roentgenologic demonstration of a calcification in the shoulder region are essential indications for this operation. The authors performed it in 38 cases, in 36 of which it produced complete relief. In 1 of the two failures a second operation was successful. It was performed to evacuate a calcific deposit which had been missed previously.

Minnesota Medicine, St. Paul

31:609-720 (June) 1948

Management of Rheumatic Fever and Rheumatic Heart Disease. B. F. Massell.—p. 633.
Abdominal Hodgkin's Disease with Report of Case Involving Retroperitoneal Nodes. W. O. B. Nelson and L. A. Dwinnell.—p. 647.
Clinical Significance of Gross Hematuria. L. F. Greene.—p. 651.
Experiences in Treatment of Volvulus of Sigmoid. C. E. Rea.—p. 653.
Experimental Studies of Liver and Thoracic Duct Lymph. J. H. Grindlay, J. C. Cain, J. L. Bollman and Eunice V. Flock.—p. 654.

Missouri State Medical Assn. Journal, St. Louis

45:465-552 (July) 1948

New Horirons in Medicine. E. L. Bortz.—p. 481.
Medicine Today. R. Mueller.—p. 484.
Diffuse Arteriolar Disease. H. O. Lloyd.—p. 486.
Psychiatric Aspects of Carcinoma of Pancreas. G. Ulett and E. H. Parsons.—p. 490.
Digitalis. T. S. Fleming.—p. 493.

45:553-624 (Aug.) 1948

Sprains. G. Pipkin.—p. 569.
Electric Convulsive Therapy in Mental Disorders Associated with Childbearing. D. A. Boyd Jr. and DeW. W. Brown.—p. 573.
Sequelae of Military Service and Their Treatment in Veterans Administration Mental Hygiene Clinic. N. Blackman.—p. 579.
Electroshock Therapy in Depressions: Notes on Clinical Application. E. H. Parsons and A. B. Scheibel.—p. 583.
Acute Volvulus of the Stomach with Spontaneous Reduction: Report of Case. C. A. Zimmermann III.—p. 585.
Caudal Analgesia: Its Application and Details of Technic. W. H. Masters.—p. 592.
Nephritis: Report of 2 Unusual Cases. R. S. Casford.—p. 599.

New England Journal of Medicine, Boston

239:75-106 (July 15) 1948

*Excessive Hypertension of Long Duration. A. M. Burgess.—p. 75.
Economics of Infant and Child Nutrition. N. B. Talbot, C. C. Koo, W. W. Pick and others.—p. 79.
Physiology. H. E. Hoff and H. J. Scott.—p. 89.
Carcinoma of Gall Bladder. Cholelithiasis.—p. 95.
Duplication of Intestinal Tract (Terminal Ileum).—p. 97.

Excessive Hypertension of Long Duration.—Burgess points out that no previously reported studies have attempted to separate the obviously nonprogressive type of hypertension from the obviously malignant type, and to study the prognosis in the nonmalignant group. With a view to finding out what happens to patients with excessive hypertension that is not of the progressive, malignant type, patients were chosen in whom the condition had existed for at least eight years. In the group of 100 patients here reported a systolic pressure of 180 or a diastolic pressure of 100 was regarded as evidence of excessive hypertension. It was found that hypertension even of an excessive degree, that has been present eight years or more and is not associated with cardiac or renal disease, usually does not indicate a poor prognosis. The patient usually lives to within three or four years of his normal life expectancy. Such hypertension does not commonly develop into the malignant type. It is not associated with great arteriolar changes, evidenced by retinal hemorrhages or edema, or with renal damage—findings that are typical of malignant hypertension. The most frequent cause of death in these patients is cardiac failure. A cerebrovascular lesion is the most common terminal event. The younger the patient at the time when the hypertension develops, the less likely he is to live his full life span. Even in the young group (age 50 and below) the average length of life is over 15 years (about eleven years below their expectancy). This is the age group in which dorsolumbar sympathectomy is usually recommended. For the malignant type of hypertension this operation is certainly of great value in delaying the fatal issue. With fifteen years or more of life ahead of him, it is questionable whether a person with the nonprogressive, nonmalignant type of high blood pressure should be subjected to such a radical procedure. The degree of hypertension is important in relation to the diastolic pressure only. Persons with extremely high systolic pressures and relatively low diastolic pressures (the arteriosclerotic type of hypertension) survive appreciably nearer to their normal expectancy, on the average, than those with high diastolic pressures.

239:107-158 (July 22) 1948

Value of Antibiotics in Diabetic Surgery. M. J. Kuffel, L. N. Irvin, D. H. Hooker and D. P. Foster.—p. 107.
Addison's Disease Complicated by Chronic Glomerulonephritis. L. Ravreby and W. H. Sawyer.—p. 110.
Spasm and Fibrosis of Sphincter Ani Due to Reflex Action. F. C. Newton and Charles A. Maggregor.—p. 113.
Succinate Therapy in Acute Rheumatic Fever. R. Wégria, E. E. Fischel and P. E. Wilson.—p. 117.
Physiology. H. E. Hoff and H. J. Scott.—p. 120.
Adenocarcinoma of Duodenum at Ampulla of Vater.—p. 145.
Pancreatic Fibrosis.—p. 148.

239:159-212 (July 29) 1948

Report to the New England Surgical Society Concerning the American Board of Surgery. S. C. Harvey.—p. 159.
Rapid Injection of Solution of Amino Acid: Note on Its Clinical Tolerance in Man. R. D. Eckhardt and C. S. Davidson.—p. 164.
Age Distribution of Poliomyelitis in Massachusetts. R. J. M. Horton and A. D. Rubenstein.—p. 169.
*Splenic Rupture in Infectious Mononucleosis. J. J. Timmes, J. H. Averill and J. Metcalfe.—p. 173.
Physiology. H. E. Hoff and H. J. Scott.—p. 176.
Retroperitoneal Fibrosarcoma, with Pressure on Right Kidney, Extension into Inferior Vena Cava, Duodenum and Ascending Colon, and with Metastases to Lung.—p. 203.
Echinococcus Cyst.—p. 205.

Splenic Rupture in Infectious Mononucleosis.—Timmes and his associates report 2 cases of infectious mononucleosis in which splenic rupture occurred. Both cases concerned 19 year old seamen. In the first case the diagnosis was not suspected preoperatively. The history of lymphadenopathy, the strongly positive heterophil antibody agglutination and the splenic disease made the diagnosis extremely probable. In the second case a tentative diagnosis of a subcapsular splenic hemorrhage was made on the basis of persistence of abdominal findings and the probability of infectious mononucleosis. In both cases the postoperative course was uneventful. The authors review 14 cases of splenic rupture in infectious mononucleosis that have been reported in the literature. They stress that with more general appreciation of the fact that in infectious mononucleosis splenic rupture may occur either spontaneously or as the result of minimal abdominal trauma three things may be accomplished. The performance of diagnostic tests for infectious mononucleosis in patients suspected of splenic rupture, and in the postoperative study of those from whom a ruptured spleen has been removed, may lead to a revision of the present estimate of the rarity of the condition. Secondly, avoidance of heavy exertion during the phase of infectious mononucleosis in which the spleen is enlarged and avoidance of repeated palpation of an enlarged spleen in patients with infectious mononucleosis may lower the incidence of this complication. Careful observation of patients with infectious mononucleosis for evidence of abdominal pain or acute blood loss may lead to more prompt surgical action, with resultant improvement in the mortality figures of this complication.

New Jersey Medical Society Journal, Trenton

45:273-320 (June) 1948

Carcinoma of Gall Bladder: Report of 26 Cases. M. Danzis.—p. 274.
Anthrax of Eyelid. Emilie V. Rundlett.—p. 277.
Use and Misuse of Hormones in Obstetrics and Gynecology. A. E. Rakoff.—p. 278.
Clinical Observations on Scabies. S. A. Klein.—p. 283.
Clinical Evaluation of Liver Function Tests. H. Greenfield.—p. 284.
What Is Cause of Congenital Malformations? W. B. Nevius.—p. 289.

45:321-376 (July) 1948

Problem of Long-Term Patient in New Jersey. E. Frankel.—p. 323.
Prevention of Common Cold. A. Bensel.—p. 328.
Constructive and Destructive Aspects of Atomic Energy. H. H. Lawrence.—p. 330.
*Industrial Sight Conservation Program for New Jersey. H. Weltchek.—p. 335.
Prophylaxis in Postoperative Thrombo-Embolus: Preliminary Report. M. Joseph.—p. 337.

Industrial Sight Conservation.—Weltchek says that proper examination of vision for industrial purposes should include (*a*) vision at 20 feet (6.1 meters), (*b*) vision at approximately 14 inches (35.6 cm.) and (*c*) vision at working distance. The vision at working distance is by far the most important part of the examination. In many instances, vision "at distance" and the vision "at near" do not correspond to vision at working distance. In an industrial procedure where fine or even gross work is done at a distance of 20 inches (50.8 cm.) from the eye, it is useless to test vision for ordinary "near" and to attempt to correct it by the usual correction for near vision; i. e., 14 inches. Proper illumination and eye safety are also important. Five "pilot" studies in various industries throughout New Jersey are now in progress. Factual material is thus being collected for the purpose of improving present concepts and practices of industrial sight conservation.

New Orleans Medical and Surgical Journal

101:1-46 (July) 1948

SYMPOSIUM ON BIOPSY PROCEDURE IN CANCER AND PRECANCEROUS LESIONS

Biopsy in Otolaryngology. G. J. Taquino.—p. 1.
Biopsy in Gastrointestinal Practice. G. McHardy and D. C. Browne.—p. 2.
Biopsy in Dermatology. C. B. Kennedy.—p. 3.
Office Biopsy in Obstetrics and Gynecology. E. L. Zander and E. R. Guidry.—p. 4.
Use of Biopsy in Urologic Practice. W. E. Kittredge.—p. 7.
Biopsy (Proctology). M. Lescale.—p. 9.
New Retractor for Use in Thyroidectomy. H. Mahorner.—p. 10.
Salmonella Blegdam Infection: Review of Literature and Report of Case. J. R. Foster.—p. 11.
Bilateral Brodie's Abscess: Report of Case. E. R. Riggall.—p. 12.
Intratracheal Anesthesia: Its Uses and Abuses. S. R. Mintz and J. Adriani.—p. 16.
Spinal Anesthesia for Cesarean Section. D. A. Roman and J. Adriani.—p. 19.
Use of Histamine Antagonist in Intravenous Pyelography. P. L. Getzoff.—p. 22.
Corneal Transplantation. R. T. Paton.—p. 25.
Dithiopropanol (BAL) in Treatment of Bichloride Poisoning. V. D'Ingianni.—p. 30.
Nitrogen Mustard Therapy. C. B. Luikart and N. S. Gilbert.—p. 32.

North Carolina Medical Journal, Winston-Salem

9:323-366 (July) 1948

The Ego and the Eye. T. A. Watters.—p. 323.
Indications for Nephro-Ureterectomy with Illustrative Cases. H. W. McKay and H. H. Baird.—p. 328.
*Salmonellosis Due to Salmonella Oregon. M. Fulton and H. L. Godwin.—p. 332.
Report of Fourteen-Month Study on Use of Vaginal and Cervical Smears in Diagnosis of Genital Malignancy. J. R. Kernodle, W. K. Cuyler, Mary K. Taylor and Pauline Jones.—p. 335.
*Effect of Anti-Reticular Cytotoxic Serum: Observations on Cases of Hodgkin's Disease. J. W. Abernethy, G. T. Harrell, L. M. Morris, H. L. Valk and others.—p. 341.
Continuous Caudal Analgesia in Poor-Risk Obstetric Patients, Especially Those with Marginal Placenta Praevia. A. T. Thorp.—p. 350.

Salmonellosis Due to Salmonella Oregon.—Fulton and Godwin feel that bacteriologic and serologic studies on patients infected with the rarer types of Salmonella are still needed. They present the case of a farmer, aged 67, who was hospitalized because of diffuse prostatic enlargement. After he had been in the hospital for more than a month, his temperature went up to 102 F. He complained of headache, cramping pain in the lower part of the abdomen and multiple watery stools.

These symptoms were accompanied by occasional bouts of nausea and vomiting. A stool culture yielded Salmonella oregon. This is the first case of Salmonella oregon identified in North Carolina, and the eleventh involving the occurrence of this organism in man. No other cases or carriers of Salmonella were detected in the patient's ward. A five day course of sulfadiazine had no apparent effect, but later the diarrhea ceased. Sulfonamide compounds apparently are not effective, and streptomycin seems to be a more promising agent. However, the mortality rate in cases of salmonellosis is low, and in view of the possibility that the organism may become resistant to streptomycin, it might be wise to hold the drug for use if and when massive invasion or septicemia occurs.

Antireticular Cytotoxic Serum in Hodgkin's Disease.—Abernethy and his associates review observations on 7 cases of Hodgkin's disease in which antireticular cytotoxic serum was administered as an adjunct to irradiation therapy. They studied the effect of the serum on the circulating blood cells, on the rate of tissue destruction, on capillary permeability and on a possible infection with Brucella. Minimal evidence suggestive of transient alteration in the reticuloendothelial system was noted; observed changes in the differential white blood cell count and in the sedimentation rate confirmed the Russian reports. Other alterations in function reported by the Russians were not confirmed, and additional objective tests to supplement the ones which they recorded failed to support their theories. The results from the use of antireticular cytotoxic serum as an adjunct to therapy in Hodgkin's disease have so far been disappointing.

Northwest Medicine, Seattle

47:491-542 (July) 1948

Esophageal Diverticula. R. F. Ahlquist and M. F. Kepl.—p. 493.
Surgical Management of Intrathoracic Esophageal Lesions. R. D. Pinkham.—p. 496.
Resection of Lower Esophagus for Bleeding Varices: Report of Case. D. B. Seabrook.—p. 498.
Unexpected Death of Apparently Healthy Adults from Natural Causes. A. R. Moritz.—p. 500.
Weil's Disease Treated with Penicillin. C. Barron and J. H. Mills.—p. 502.
Scleroma. C. K. Miller.—p. 504.
Use of Cushing Clip in Transabdominal Vagotomy: Unusual Complication. R. R. De Nicola and P. E. Kendall.—p. 505.
Injury to Liver with Biliary Fistula. M. L. Johnson.—p. 508.
Cancer Detection Centers in State of Washington. C. P. Larson.—p. 510.
Mesantoin in Treatment of Epilepsy. N. K. Rickles.—p. 513.
Multiple Sclerosis: Diagnosis, Therapy and Rehabilitation. J. T. Robson.—p. 514.

Occupational Medicine, Chicago

5:1-30 (Jan.) 1948

Value of Early Ambulation in Industrial Surgical Treatment. D. J. Leithauser.—p. 1.
Illness and Injury Rates in Small Industrial Plants: Study in Factory Epidemiology. J. W. Meigs.—p. 11.
*Study of Resuscitation from Juxtalethal Effects of Exposure to Carbon Monoxide. H. Schwerma, A. C. Ivy, H. Friedman and E. La Brosse.—p. 24.
Primary Care of Injured Hand. J. C. Detro.—p. 49.
Study of Lead Exposures in Three Metropolitan Newspaper Plants. J. F. Keppler and H. E. Bumsted.—p. 65.
Effects of New Forms of Energy on Industry and Medical Service. J. S. Felton.—p. 73.
Dislocation of Thyroid Cartilage: Report of Case. E. J. Elsbach.—p. 78.

Resuscitation After Exposure to Carbon Monoxide.—This report by Schwerma and his co-workers presents the results obtained when dogs were exposed in a chamber to air containing 0.3 per cent carbon monoxide from the gas main in Chicago until the first respiratory gasp occurred. At this point the animal was immediately removed from the chamber and one of six procedures was instituted. Thirty-six per cent, or 8 of 22 dogs, survived when given manual artificial respiration in air. Forty-three per cent, or 13 of 30 dogs, survived when given manual artificial respiration in 7 per cent "carbogen." Sixty-nine per cent, or 57 of 82 dogs, survived when given mechanical artificial respiration with a device providing alternating positive and negative pressure, using 100 per cent oxygen. Sixty-six per cent, or 55 of 83 dogs, survived when given mechanical artificial respiration with the same device, using 7 per cent "carbogen." Sixty-five per cent, or 13 of 20 dogs, survived when given mechanical artificial respiration with an alternating positive pressure device, using 100 per cent oxygen. Mechanically produced artificial respiration using 100 per cent oxygen or 7 per cent "carbogen" is significantly superior to that produced manually in air. Regardless of this fact, the manual method must be taught because it is always available. Three cases of pneumonia (10 per cent) occurred among the 31 survivors resuscitated by manual artificial respiration or by being placed in "fresh air." Twenty-six cases of pneumonia occurred among 125 survivors (24 per cent) which were resuscitated with positive pressure devices. This difference is not considered significant, since it could occur by chance in 15 of 100 such experiments. The incidence of pneumonia was the same whether 100 per cent oxygen or 7 per cent "carbogen" was used for resuscitation. In regard to survival and the incidence and severity of neurologic sequelae no difference was found between the use of 100 per cent oxygen and 7 per cent "carbogen" in resuscitation from carbon monoxide asphyxia.

Psychiatry, Washington, D. C.

11:105-222 (May) 1948. **Partial Index**

Towards Psychiatry of Peoples. H. S. Sullivan.—p. 105.
Anti-Nazis: Criteria of Differentiation. D. M. Levy.—p. 125.
Rôle of Parent in Psychotherapy with Children. Hilde Bruch.—p. 169.
Maine, McLennan, and Freud. A. J. Levin.—p. 177.

Public Health Reports, Washington, D. C.

63:901-932 (July 9) 1948

Studies on Duration of Disabling Sickness: VII. Duration Table for Specific Causes of Disability Among Male Workers. W. M. Gafafer.—p. 901.

63:933-966 (July 16) 1948

Bactericidal Properties of Chloramines and Free Chlorine in Water. C. T. Butterfield.—p. 934.
Relation of Reported Cases of Typhus Fever to Location, Temperature, and Precipitation. C. R. Eskey and F. M. Hemphill.—p. 941.

63:967-990 (July 23) 1948

Technic in Evaluation of Rapid Antisyphilitic Therapy. A. P. Iskrant, R. W. Bowman and J. F. Donohue.—p. 965.

63:991-1026 (July 30) 1948

Transfer of Malarial Parasites Between Blood Films During Mass Stairing Procedures. M. M. Brooke and A. W. Donaldson.—p. 991.
Combined Typhus-Malaria Control Residual Spray Operations with Five Percent DDT Emulsion. H. P. Nicholson, T. B. Gaines, J. G. McWilliams and M. H. Vetter.—p. 1005.

Surgery, Gynecology and Obstetrics, Chicago

87:129-256 (Aug.) 1948

*Portacaval Shunts in Treatment of Portal Hypertension: Analysis of 15 Cases with Special Reference to Suture Type of End-to-Side Splenorenal Anastomosis with Splenectomy and Preservation of Kidney. R. L. Linton, I. B. Hardy Jr. and W. Volwiler.—p. 129.
Childbearing in Twilight of Reproductive Period. M. E. Davis and A. Seski.—p. 145.
Carcinoma of Lip: Review of 563 Case Records of Carcinoma of Lip at Pondville Hospital. J. E. Cross, E. Guralnick and E. M. Daland.—p. 153.
Blood Volume and Other Determinations in Preoperative and Postoperative Care: Their Practical Applications in Average Hospital. C. A. Beling, T. V. Morton and D. T. Bosch.—p. 163.
*Surgical Aspects of Hyperparathyroidism: Review of 63 Cases. M. Black.—p. 172.
Interatrial Septal Defect—Its Experimental Production Under Direct Vision Without Interruption of Circulation. A. Blalock and C. R. Hanlon.—p. 183.
*Studies on Vagotomy in Treatment of Peptic Ulcer: III. Physiologic Aspect. I. F. Stein Jr. and K. A. Meyer.—p. 188.
*Cervical Cytology: Key to Diagnosis of Early Uterine Cancer. H. Oxorn.—p. 197.
Acute Non-Clostridial Crepitant Cellulitis. W. A. Altemeier and W. R. Culbertson.—p. 206.
Discussion of Uses of Metals in Surgery and Experimental Study of Use of Zirconium. J. I. Bates, C. R. Reiners and R. C. Horn.—p. 213.
Reactions to Morphine in Ambulatory and Bed Patients. J. H. Comroe Jr. and R. D. Dripps.—p. 221.
Re-Evaluation of Role of Pyloric Antrum in Marginal Peptic Ulcers. J. A. Schilling and H. E. Pearse.—p. 225.

Portacaval Shunts in Treatment of Portal Hypertension.—Linton and his associates discuss various types of portal bed block and report observations on 15 patients who have been treated by various types of shunt operations. The most common form of intrahepatic block results from portal or Laennec's cirrhosis secondary to the scar tissue replacement of the liver parenchyma. The extrahepatic portal bed block (so-called Banti's syndrome) may be either congenital or acquired. A combination of the intrahepatic and extrahepatic types may also occur. It was present in 2 of the 15 cases reviewed by the authors. Patients with portal hypertension secondary to a portal bed block, as a rule, seek medical advice because of a sudden massive hematemesis or melena. Portal hypertension should always be considered in the differential diagnosis of hematemesis or melena. Roentgenologic examination of the esophagus with barium to determine the presence or absence of varices is the most important diagnostic procedure. The portacaval shunt type of operation represents a new chapter in the treatment of portal hypertension. It apparently prevents serious hemorrhage from esophageal varices, although they may still persist, and in addition it may improve the hepatic function. Splenectomy and the suture type of end to side splenorenal anastomosis with preservation of the kidney, performed through a thoracoabdominal incision, are recommended as the most satisfactory operative procedure in cases in which the spleen has not been previously removed. Anastomosis of the superior mesenteric vein to the inferior vena cava and of the inferior mesenteric vein to the left ovarian vein has been utilized with apparent success, in 2 patients who had had the spleen previously removed. Direct anastomosis of the portal vein to the inferior vena cava may frequently be impossible due to the extreme degree of vascularity in the region of the gastrohepatic ligament. The results of various types of portacaval shunts have been more satisfactory in extrahepatic portal bed block than in the intrahepatic type.

Surgical Aspects of Hyperparathyroidism.—Black reports on 63 patients with proved hyperparathyroidism that were observed at the Mayo Clinic to the end of 1946. The disease was due to a single adenoma in 56 cases, to multiple adenomas in 3 cases and to diffuse primary hyperplasia in 4 cases. Complications of the urinary tract were more common and more important than osseous complications. Since the diagnosis can be made with certainty, exploration of the parathyroid glands is never indicated to establish the diagnosis. The treatment of hyperparathyroidism is surgical. Adenomas should be removed completely and, in cases of diffuse primary hyperplasia, the hyperplastic tissue should be excised subtotally, with preservation of 30 to 200 mg. of hyperplastic tissue. In more than 80 per cent of cases, the abnormal tissue may be found by dissection under direct vision through a cervical incision (cervical and posterior superior mediastinal dissection). A second operation, through a sternotomy incision, will be necessary in the remaining cases (anterior superior mediastinal dissection). Secondary dissection is more difficult and far less certain than primary dissection, so that every effort should be made at complete operation, both in identifying the parathyroid glands present and in designating those missing, at the first cervical dissection.

Physiologic Aspects of Vagotomy in Peptic Ulcer.—Stein and Meyer say that in June of 1946 a study of vagotomy in the treatment of peptic ulcer was started on one of the surgical services at the Cook County Hospital. Vagus section was carried out in 35 instances. Physiologic studies of the stomach were made before and after vagotomy in 30 patients. Each of the following determinations was made on a significant number of patients before and after surgery: (1) twelve hour night secretion, (2) basal secretion, (3) the effect of histamine on gastric secretion, (4) the effect of caffeine on gastric secretion, (5) the effect of atropine on basal secretion, (6) the spontaneous motility of the stomach and the effect of insulin on secretion and motility, (7) the pain threshold to electrical stimulation and (8) the production of pain by the introduction of acid into the stomach. The secretory activity of the stomach may be divided into the period of interdigestive or continuous secretion and the digestive period of secretion. The latter consists of three phases: the cephalic, the gastric and the intestinal. The cephalic gastric secretion is mediated entirely by the vagi. The gastric phase can be provoked by mechanical stimulation and secretagogues, and has been considered independent of the vagus. In view of the considerable decrease in the secretory response to histamine and caffeine after complete vagotomy, it is apparent that the gastric phase of secretion is also to some extent influenced by the vagus. The secretory response to chemical stimuli was reduced in every patient in whom the insulin test indicated that vagotomy was complete. The authors feel that the inconsistent results reported by other workers may be due to failure to distinguish between completely and incompletely vagotomized subjects. They also obtained confirmatory evidence of the reliability of the insulin test as an indication of the completeness of vagotomy. After complete vagotomy there is a considerable reduction of the night secretion and the basal secretion. The secretory response of the stomach to caffeine and histamine is greatly reduced. There are no spontaneous hunger contractions in the fundus of the stomach up to nine months after complete vagotomy. Complete vagus section in some manner interrupts a mechanism necessary for chronicity of peptic ulceration.

Cervical Cytology in Early Uterine Cancer.—Oxorn discusses the basic principles of the cytologic tests and their application in the early diagnosis of cancer of the uterus. He describes the vaginal aspiration, the cervical aspiration and the cervical spatula technic and discusses their relative merits. It is believed that the cervical spatula test is the most efficient in the diagnosis of extremely early cervical cancer. Emphasis is placed on the importance of having a central laboratory in each district where expert study of these smears may be made. Describing the glycerine mailing technic of Ayre and Dakin, the author says that after standing in the ether-alcohol fixer for one hour, or more, the slides are removed from the solution. Without permitting them to dry, one places a large drop of glycerine in the center of the secretion zone. A second, clean, slide is placed face to face with the smear, and the glycerine spreads out to cover the entire smear area, sealing it off completely. Each unit is made up of two slides: (1) the slide with the smear on it and (2) a clean slide acting as a cover slip. The slides are then placed in wooden or cardboard containers, to prevent breakage, and are mailed to the cytology laboratory. Once the slides arrive at their destination the glycerine is washed off, and the usual staining routine is carried out. Smears can be taken by every practitioner in his office. This combined with the mailing technic makes it possible for every doctor and every patient to reap the benefits of this modern diagnostic procedure. Cancer of the uterine fundus as well as cancer of the cervix can be diagnosed accurately by the cytology method These smears provide a reasonably accurate measure of endogenous body estrogen at any one time. The advantages and disadvantages of the tests are presented. It is concluded that the use of routine periodic check-ups with cytologic tests at each visit will do much to lower the present high mortality rate from uterine cancer.

Texas State Journal of Medicine, Fort Worth

44:67-188 (June) 1948

Blueprint for Action. B. E. Pickett.—p. 73.
Memorial Address. J. W. Torbett Sr.—p. 77.
Medical Legislation. G. F. Lull.—p. 78.
Present Status of Synergistic and Additive Chemotherapy. J. A. Kolmer. —p. 81.
Your Health and the Soil. E. P. McKinney.—p. 85.

44:189-276 (July) 1948

Relation of General Practitioner to Over-All Health Program. W. M. Johnson.—p. 192.
It's Health Roundup Time in Texas. H. Emerson.—p. 195.
Responsibilities and Duties of Federal, State, and Local Health Agencies. J. W. Bass.—p. 199.
Statistical Data in Preventive Medicine and Public Health Administration. L. P. Walter.—p. 203.
Epidemiology and Recent Developments in Poliomyelitis. J. G. Molner —p. 207.
Tonsillectomy and Poliomyelitis. J. W. Eschenbrenner.—p. 211.
Q Fever: Present Status in United States. E. Strauss and S. E. Sulkin. —p. 214.
Tuberculosis Eradication—a Possibility. E. Mendenhall.—p. 218.
Present Status of Pediatric Care in Texas. D. Greer.—p. 221.

West Virginia Medical Journal, Charleston

44:177-208 (July) 1948

West Virginia University and Medical Education in West Virginia. I. Stewart.—p. 177.
Diet and Insulin in Some Diabetic Complications. G. P. Heffner.—p. 185.
Intervertebral Disk Lesions. J. M. Meredith.—p. 191.
Cardiac Emergencies. S. M. Jacobson.—p. 197.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

7:63-126 (June) 1948

Necrobiotic Nodules of Rheumatoid Arthritis: Case in Which Scalp, Abdominal Wall (Involving Striped Muscle), Larynx, Pericardium (Involving Myocardium), Pleurae (Involving Lungs), and Peritoneum Were Affected. R. W. Raven, F. P. Weber and L. W. Price.—p. 63.
*Investigations into Effect of Hot, Dry Microclimate on Peripheral Circulation, etc., in Arthritic Patients. G. Edström, G. Lundin and T. Wramner.—p. 76.
Flocculation Tests in Rheumatoid Arthritis. T. N. Fraser.—p. 83.
Interstitial Neuritis and Neural Theory of Fibrositis. M. Kelly.—p. 89.
Relation of Cardiac Lesions of Rheumatoid Arthritis to Those of Rheumatic Fever. A. D. Wallis.—p. 97.
Controlled Series of Cooke-Arneth Polynuclear Counts in Rheumatoid Arthritis. H. J. Gibson and D. Shiers.—p. 100.
Phosphatase Activity in Spondylitis Ankylopoietica. M. H. L. Desmarais. —p. 105.

Hot, Dry Climate for Arthritic Patients.—For the last six years Edström and his associates have had one ward in the rheumatologic department of the University Hospital in Lund constantly air conditioned at 32 C. and 35 per cent relative humidity. In this ward they have treated arthritic patients, each of them for about a hundred days. The peripheral circulation increased in all. Peripheral vasospasm was converted into peripheral vasodilatation. The arteriovenous anastomoses especially have been maximally dilated. The temperature of the skin, which was lower at an ordinary room temperature of 20 C. (especially in cases of rheumatoid arthritis) has been raised, particularly on hands, feet and distal part of the extremities. The relative oxygen saturation of venous blood, measured at the medial cubital vein, increased in the hot rooms, while the arteriovenous difference diminished. Cultures from the throat flora showed in most cases beta-hemolytic streptococci on admission of patients to the hot room, but only in 2 cases were such cocci detected at the end of their stay. These cocci apparently do not tolerate this dry hot climate. The most obvious effects on the clinical symptoms have been: remission of periarticular edema and capsular swelling of joints, diminished shifting pains and contractures, better appetite, improved function in cases of cardiac defects and disappearance of the blue livid coloration of skin on hands and feet. Tendency to recurrence immediately after removal back into ordinary room temperature has not been observed.

British Heart Journal, London

10:1-64 (Jan.) 1948

Angina in Women. V. K. Summers.—p. 4.
Clinical Value of Unipolar Chest and Limb Leads. C. W. C. Bain and E. McV. Redfern.—p. 9.
*Two Cases of Temporal Arteritis: One with Angina of Effort. L. Cole. —p. 26.
Hypertension Due to Syphilitic Occlusion of Main Renal Arteries. R. K. Price and R. Skelton.—p. 29.
Ball Thrombus of Heart. M. E. Evans.—p. 34.
Mass Thrombus of Left Auricle. W. Evans and R. Benson.—p. 39.
Variation of Casual, Basal, and Supplemental Blood Pressures in Health and in Essential Hypertension. J. A. Kilpatrick.—p. 48.
Cardiovascular Changes Following Electro-Convulsive Therapy. R. Kauntze and G. Parsons-Smith.—p. 57.

Temporal Arteritis.—The age of onset in Cole's 3 patients was between 65 and 72, and the symptoms and signs produced by involvement of the temporal arteries ran a course lasting from four to six months. All 3 showed evidence of arteriosclerosis in the radial and brachial arteries, and 2 died suddenly from cardiovascular accidents. The key to the diagnosis has been severe headaches leading to the discovery of the involvement of the temporal arteries. More cases should be published in order that the condition may be widely recognized and more may be learned about its protean manifestations. At present the general verdict is that the prognosis is good as far as the local condition in the temporal arteries is concerned, for this tends to clear up in about a year. It is not yet so clear how far extension of the process to more vital arteries may be responsible for deaths such as occurred in these patients, and a follow-up of more cases is needed.

British Journal of Dermatology and Syphilis, London

60:195-234 (June) 1948

Psoriasis of Nails. J. Alkiewicz.—p. 195.
Pityriasis Rosea Sparing Tanned Areas of Skin: Report of 2 Cases. J. Kinnear.—p. 200.
Erythrosis Pigmentosa Peribuccalis. E. L. Cohen.—p. 203.
Report on Case of Leukemia Cutis. H. D. Chambers.—p. 211.

British Journal of Experimental Pathology, London

29:93-190 (April) 1948

Prolonged Administration of Thyroxine to Cows, with Particular Reference to Effects on Thyroid Function and on Pituitary Thyrotrophic Hormone. M. T. McQuillan, V. M. Trikojus, A. D. Campbell and A. W. Turner.—p. 93.
Rift Valley Fever: Isolation of Virus from Wild Mosquitoes. K. C. Smithburn, A. J. Haddow and J. D. Gillett.—p. 107.
Bodily Reactions to Trauma: Effect of Ischemia on Muscle Protein. H. B. Stoner and H. N. Green.—p. 121.
Influenza in Great Britain 1946-47. J. A. Dudgeon, H. Mellanby, R. E. Gloyer and C. H. Andrewes.—p. 132.
Antigenic Efficiency of CL. Welchii Epsilon Toxin and Toxoid After Treatment with Trypsin. I. Batty and A. T. Glenny.—p. 141.
*Effects of Short-Term Changes in Dietary Protein on Response of Liver to Carbon Tetrachloride Injury. R. M. Campbell and H W. Kosterlitz.—p. 149.
Detection of Product of Blood Group 0 Gene and Relationship of So-Called 0-Substance to Agglutinogens A and B. W. T. J. Morgan and W. M. Watkins.—p. 159.
Fibrin Barrier Regarded as Filter in Inflammation. W. H. Hughes. —p. 173.
Virulence and Toxigenicity of Different Serologic Types of C. Diphtheriae. L. F. Hewitt.—p. 181.

Effects of Short Term Changes in Dietary Protein on Liver in Carbon Tetrachloride Injury.—According to Campbell and Kosterlitz the nutritional condition of an animal greatly determines its resistance to toxic halogenated hydrocarbons. In view of the fact that the protein content of the diet determines the amount of labile cytoplasm (protein plus phospholipin plus nucleic acid, PPN) present in the liver cell it was of interest to examine whether the severity of liver injury caused by a single administration of carbon tetrachloride could be correlated with the presence or absence of labile PPN. Rats were placed on a protein-free 18 per cent or 54 per cent casein diet for three days prior to a single injection of carbon tetrachloride. The damage to the liver as measured by central necrosis, hydropic degeneration and deposition of neutral lipids was least on the protein-free diet. The rats on the 18 per cent casein diet showed the highest incidence of hydropic degeneration, and those on the 54 per cent casein diet the greatest deposition of neutral lipids. On all diets there was a considerable loss of glycogen. These results are in agreement with the findings of other observers, that, if given for short periods before the administration of chloroform or carbon tetrachloride, a diet rich in carbohydrate, low in fat and protein gives the highest protection against injury to the liver. On the other hand, prolonged dietary protein deficiency leads to protein depletion, which renders the liver highly susceptible to this type of injury.

British Medical Journal, London

1:1221-1270 (June 26) 1948

*Modern Therapy of Benign Tertian Malaria. J. F. Monk.—p. 1221.
Demonstration of Persisting Exo-Erythrocytic Cycle in Plasmodium Cynomolgi and Its Bearing on Production of Relapses. H. E. Shortt and P. C. C. Garnham.—p. 1225.
Bilharzial Affection of Ureter: Study of 110 Consecutive Necropsies Showing Vesical Bilharziasis. M. Gelfand.—p. 1228.
Recent Trends in Treatment of Prostatic Obstruction. A. Jacobs. —p. 1231.
Lower-Segment Caesarean Section: New Head Extractor. B. C. Murless. —p. 1234.
Papillomata of Bladder Treated with Podophyllin: Preliminary Report. J. E. Semple.—p. 1235.
Case of Sarcoma of Larynx. E. Broughton-Barnes, E. S. Duthie and B. Jolles.—p. 1237.

Modern Therapy of Benign Tertian Malaria.—Monk points out that the recent war gave impetus to the search for the ideal antimalarial drug. He reviews the stage at which the treatment of benign tertian malaria has arrived, discussing experiences with the following drugs: quinine, quinacrine, an acridine dye, "paludrine hydrachloride" (chlorguanide hydrochloride), chloroquine, a 4-aminoquinoline derivative, pamaquine, an 8-aminoquinoline compound, and pentaquine, an 8-aminoquinoline derivative. The ideal drug for the prevention and cure of benign tertian malaria is still to be found. Quinine therapy alone and unaided is of little value. Suppressive and curative treatment with quinacrine is likely to be superseded by more recently discovered antimalarial drugs. Chlorguanide and chloroquine are probably effective in producing complete suppression of overt attacks of malaria in once-weekly dosage. Neither is able to prevent the establishment of Plasmodium vivax in the human host even by daily dosage, but chlorguanide has some inhibitive effect on the preerythrocytic forms. Neither drug given alone is as successful as other forms of therapy in producing a low relapse rate. Pamaquine is a drug which deserves greater recognition as a safe medium for the elimination of P. vivax infections. Given as an adjuvant in any course of antimalarial therapy, it is of the greatest value in reducing the relapse rate. The toxicity of pamaquine is shown to be less formidable than is generally accepted. No treatment so far administered to a large series of patients with naturally occurring benign tertian malaria is more successful than quinine given concurrently with pamaquine. Chlorguanide given concurrently with pamaquine is equally successful. Pentaquine given concurrently with quinine is likely to prove more successful in producing a lower relapse rate than any other therapeutic regimen. The toxicity of pentaquine is approximately three quarters that of pamaquine. A thirty-one day intermittent course of quinine and pamaquine proved successful in the complete eradication of P. vivax infections in all patients followed up in a series of 45 cases. It is suggested that such a course is worth extended trials among cases of chronic relapsing malaria in a nonmalarious area.

Journal of Mental Science, London

94:215-512 (April) 1948. Partial Index

Identity of Alzheimer's Disease and Senile Dementia and Their Relationship to Senility. R. D. Newton.—p. 225.
Genetics in Relation to Mental Disorders. F. J. Kallmann.—p. 250.
Mental Deficiency and Social Medicine. E. O. Lewis.—p. 258.
Modern Approach to Juvenile Delinquency: Observation Centers. A. Kennedy.—p. 283.
Significance of Home for Child's Emotional Development During First Six Years. Kate Friedlander.—p. 305.
Medea Complex: Mother's Homicidal Wishes to Her Child. E. S. Stern. —p. 321.
Physiologic and Psychologic Responses to Stress in Neurotic Patients. M. Jones.—p. 392.
*Personality Change and Prognosis After Leukotomy. G. Garmany. —p. 428.
Delinquency and Epilepsy: Clinical and Electrophysiologic Note. R. S. Hodge.—p. 439.
*Kent and Other Tests Used on Same Subjects. G. De M. Rudolf. —p. 452.
Management of Chronic Mental Patients. A. P. Tait.—p. 459.

Personality Change After Leukotomy.—Garmany reports on 59 patients who had undergone leukotomy not less than three years previously. Leukotomy proved successful in half of the 22 patients with depression and also in half of the 10 patients with paranoid schizophrenia, but in only 1 of 15 patients with hebephrenia and in only 2 of 10 patients with catatonic schizophrenia. The author believes that no permanent personality change occurs which is ascribable to the operation alone. Restitution depends materially on the possibility of rehabilitation, particularly in the patient's own home. In depression, a good personality, free from lifelong morbid patterns of reaction, and average intelligence are essential if a good prognosis is to be given. Heavily emphasized hypochondriacal reactions or *bizarreric* are bad omens, and equally so are schizophrenic features and organic dementia. In the case of hebephrenic and catatonic reactions, it seems doubtful whether the operation is worth doing unless circumstances are quite exceptional; in paranoid schizophrenia the operation seems to offer reasonable hope if the premorbid personality was good, and particularly if passivity and catatonic features are not prominent. It is well to remember that the curative effects of leukotomy may not be permanent, and the reorganization of disease patterns shown in 3 cases in this series, after a long period of comparative fitness, may prove to be a not uncommon phenomenon with longer observation.

The Kent and Other Tests.—Rudolf points out that tests of the indefinable quality known as intelligence are legion. Many have been standardized satisfactorily; others have not. The validity of some tests is high, but results of different tests used on the same persons have seldom been published. In the comparative investigations reported in this paper a total of 1,566 persons were examined as follows: (1) 557 subjects, each tested with the Kent and the Stanford-Binet tests; (2) 409 subjects, each tested with the Kent and part I of the Farmer-Hotoph 3 (or R) given as a group test, and (3) 600 subjects, each tested with the Kent and the Progressive matrices given as a group test. On the basis of the results obtained, the author concludes that the Kent emergency test cannot be used as an alternative to the Stanford-Binet, the progressive matrices, or the Farmer-Hotoph 3 (or R) test, as it does not record similar results on the same persons.

Lancet, London

1:973-1012 (June 26) 1948

Neuralgic Amyotrophy: Shoulder-Girdle Syndrome. M. J. Parsonage and J. W. A. Turner.—p. 973.
*Vaccination Against Influenza A. Helen Mellanby, J. A. Dudgeon, C. H. Andrews and D. G. Mackay.—p. 978.
Primary Pulmonary Coccidioidomycosis: Case of Laboratory Infection in England. J. D. N. Nabarro.—p. 982.
Postcricoid Pharyngo-Esophageal Perforation Due to Endoscopy Treated by Immediate Suture. J. C. Goligher.—p. 985.
Surgery of Pulmonary Stenosis: Case in Which Pulmonary Valve Was Successfully Divided. T. H. Sellors.—p. 988.

Vaccination Against Influenza A.—Mellanby and her associates state that an attempt was made during the winter of 1946-1947 to test the value of influenza vaccination in Britain. The vaccine used was made from infected allantoic fluids inactivated with 1:2,000 formaldehyde and concentrated by the method of Francis and Salk. Prophylactic vaccination was carried out under controlled conditions during November and December, 1946, in twenty-four mental hospitals, three public schools and numerous small communities, including two preparatory schools, nursing staffs of hospitals and some patients of general practitioners. In eighteen Army training centers alternate intakes were vaccinated. Altogether some 20,000 persons were inoculated, there being about an equal number of uninoculated controls living under similar conditions. In the mental hospitals and in some small groups the incidence of influenza was so low that no conclusions about the efficacy of the vaccine could be drawn. In two out of three schools there were outbreaks of influenza. In one the incidence in the vaccinated boys was 11 per cent and in the controls 21 per cent; in the second the incidence was 11 per cent in the vaccinated and 17.3 per cent in the controls. Outbreaks of disease of the respiratory tract were observed in only three of the eighteen Army units, and one of these the disease probably was not influenzal. In the other two the incidence of influenza was 7.1 per cent in the vaccinated and 8.3 per cent in the controls—not a significant difference. The conclusion is that, in the absence of a widespread epidemic involving many units, a trial on the lines described is unlikely to give a definite answer. The results are much less encouraging than those reported in 1944 and 1946 from the United States. Recent reports from there indicate that in 1947 vaccination had little, if any, effect on the incidence of influenza. Apparently the strains of virus A causing the 1947 epidemics were antigenically rather remote from those contained in the vaccine.

Medical Journal of Australia, Sydney

1:725-752 (June 12) 1948

Other Ways of Doing Things. A. A. Abbie.—p. 725.
Diagnosis of Fallot's Tetralogy and Rationale of Its Surgical Treatment. M. N. Allen.—p. 729.
Surgical Treatment of Fallot's Tetralogy. C. J. Officer Brown.—p. 731.
**Anesthesia in Surgical Treatment of Tetralogy of Fallot.* R. H. Orton. —p. 733.
Corneal Transplantations. P. B. English and J. M. White.—p. 736.

Anesthesia in Surgical Treatment of Tetralogy of Fallot.—Orton points out that in the tetralogy of Fallot cyanosis is the outstanding clinical feature. The reasons for its presence, together with its relationship to anoxia, must be considered in order that the physiologic problems that the anesthetist must solve may be understood. At his clinic premedication with morphine was used with the object of lowering the metabolic rate. Atropine was included in the premedication, in spite of its reverse action, owing to the desirability of suppressing secretions in the pharynx. Cyclopropane was administered as the main anesthetic agent, first, as it made possible the use of a high partial pressure of oxygen, and, second, as controlled respiration is easier with this drug than with ether. Curare was employed as an adjuvant with anesthesia in order to control coughing reflexes and to allow extremely light planes of anesthesia. Control of respiration was established as soon as the larynx had been intubated, and was maintained throughout. In this way adequate pulmonary ventilation was possible in the presence of an open pneumothorax. Further, it was considered that, since the respiratory center in these patients functioned in an abnormal manner, it was preferable to abolish voluntary respiration. Two cases are described in which success was achieved in establishing an artificial communication between the pulmonary and aortic circulations. Since then 9 additional patients with tetralogy of Fallot have been operated on. The method of anesthesia differed in no way from that described.

Proceedings of Royal Society of Medicine, London

41:343-408 (June) 1948. **Partial Index**

Growth and Physical Performance of Children in Relation to Maturity. R. W. B. Ellis.—p. 343.
Surgical Lectures of 150 Years Ago. V. Z. Cope.—p. 353.
Treatment of Congenital Dislocation of Hip. D. Browne.—p. 388.
Hallux Valgus in the Adolescent. A. R. Jones.—p. 392.
Role of Physiotherapy in Treatment of Poliomyelitis. F. S. Cooksey.—p. 395.
Infantile Cerebral Palsy. P. R. Evans.—p. 402.

South African Medical Journal, Cape Town

22:365-388 (June 12) 1948. **Partial Index**

Rings of Labor with Emphasis on Constriction Ring. J. T. Louw.—p. 366.
Health Center Practice in Relation to Private Practice: Memorandum. G. W. Gale—p. 370.
*Soy Bean Culture Medium for Vaccine Production. G. H. Ford and W. Lewin.—p. 372.
*Hiatus Hernia, Diverticula and Gall Stones: Saint's Triad. C. J. B. Muller.—p. 376.

Soya Bean Culture for Vaccine.—Ford and Lewin describe a method for the preparation of a soya bean broth, which was used for the preparation of typhoid vaccine. The vaccine thus prepared was compared with one produced on a meat medium in regard to agglutinin production in rabbits and mouse protection tests and was found not to be inferior to that produced on a meat medium.

Hiatus Hernia, Diverticula and Gallstones.—Muller says that Professor Saint of Cape Town called attention to the association of hiatus hernia, sacculi of the colon and gallstones. Its prognostic importance in avoiding unwarranted treatment, and the differential diagnosis from a host of pulmonary, cardiac and abdominal conditions makes the triad of practical as well as of academic interest. Many references are made in the literature to hiatus hernia and diverticula of the duodenum and colon, hiatus hernia and gallstones, duodenal ulcer and chronic appendicitis, but the author found no reference to the triad of hiatus hernia, diverticula of the colon and gallstones. In the course of making several hundred barium meal studies he observed 3 such cases. The author thinks that more cases of association of this triad of Saint will be found, if they are searched for.

Archivos Argent. Enf. ap. Dig. y Nut., Buenos Aires

22:361-498 (Nov.-Dec.) 1947. **Partial Index**

*Action of Liver Antitoxic Principle in Hepatobiliopathies. J. Nasio.—p. 375.

Action of Liver Antitoxic Principle in Hepatobiliopathies.—Nasio studied the effects of the liver antitoxic principle on a large number of normal persons and on 450 patients with diseases of the liver and of the bile ducts who were observed, in the course of the last five years, at the Argentinean Dispensary for Diseases of the Digestive Apparatus. The liver crystalline substance used by the author was prepared by the American technic. Each cubic centimeter of the substance contains 0.0025 Gm. of the active liver principle as obtained from 50 Gm. of fresh hog's liver. The liver substance was given by intramuscular route in daily dose which varied from 2 cc. to 5 cc., in relation to the more or less acute degree of insufficiency of liver antitoxic principle. The author found that the crystalline antitoxic liver principle is of great value in the therapy of diseases of the liver and the bile ducts. It protects the liver and stimulates elimination through the bile ducts and specific antitoxic function of the liver. The therapeutic effect of the liver antitoxic principle can be evaluated clinically by the Quick test, which is performed before and on the seventh day after administration of a daily dose of 3 cc. of liver antitoxic principle. A good positive response shows by an increased elimination of 50 per cent or more of hippuric and benzoic acids of the Quick test. It indicates a good prognosis and continuation of medical treatment, whereas a negative result indicates either surgical treatment or the presence of an irreversible hepatobiliary disease.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

92:1509-1580 (May 22) 1948. **Partial Index**

Prostatectomy According to Terence Millin. G. L. van der Zwaag.—p. 1517.
*Ascites and Hydrothorax in Presence of Tumors in Lower Abdomen: Syndrome of Meigs. G. Blomhert and Loe Ping Kian.—p. 1523.
*Sporadic Positivity of Sputum. H. C. Hallo and W. C. J. B. Hulscher.—p. 1533.

Ascites and Hydrothorax in Presence of Tumors in Lower Part of Abdomen.—Blomhert and Loe Ping Kian point out that formerly, when accumulations of fluid in abdomen or thorax accompanied a tumor in the genital apparatus, a malignant tumor with metastasis was generally thought of, and only palliative measures were taken as a rule. Meigs and Cass, in 1937, called attention to the fact that a benign tumor may cause ascites and hydrothorax and that such patients can be cured by surgical removal of the tumor. Since then the condition has been known as the syndrome of Meigs. Later studies indicated not only that benign and malignant tumors of the female genital tract may cause this accumulation of fluid in abdomen and thorax, but that this syndrome is an example of a mechanism of much more general occurrence. If certain anatomic and physiologic conditions are fulfilled, any form of ascites, presumably by means of lymphogenous transport, may be accompanied by liquid in both pleural cavities. The authors present a case history which illustrates that tumors of the ovary may be accompanied not only by ascites, but also by hydrothorax.

Sporadically Positive Sputum.—Hallo and Hulscher report that in the course of one year 16 patients were observed in a consultation office for tuberculosis in whom the sputum proved positive during a cold, although clinical and roentgenologic signs indicated that their pulmonary processes were inactive and remained so on further observation. Subsequent cultures of sputum and stomach contents appeared to be negative again. The authors point out that these patients may become the source of infection, although they are regarded as noninfectious.

Semaine des Hôpitaux de Paris

24:1915-1936 (Aug. 6) 1948

*Acute Primary Cardiac Failure in Early Infancy. R. Clément, J. Gerbeaux and R. Nebout.—p. 1915.
Subacute Infectious Dermatomyositis. R. A. Marquézy and J. Bonnette.—p. 1923.

Primary Cardiac Failure in Infancy.—Clément and his co-workers report 4 cases of acute cardiac decompensation in children between the ages of 18 months and 4 years. The clinical picture was identical in all cases. Apparently there was a violent onset of the syndrome. But in reality some accidents of the same type preceded in all cases and were followed by regression. During the first hours disturbances of digestion, particularly vomiting, were of considerable importance. Then the cardiac signs became predominant. There was dyspnea with intense tachypnea and in some instances a galloping rhythm, hepatomegaly and occasionally splenomegaly. The heart volume was enormously increased clinically as well as on roentgenologic examination. Pulmonary stasis was present at the same time. No signs of involvement of the kidneys were observed, and there was complete apyrexia. Complete recovery resulted from treatment with digitalis preparations in 2 patients. The third patient showed considerable improvement, but one year after the initial attack he continued to have attacks of the disease from time to time. The fourth patient was seen by the authors only shortly before death. Necropsy revealed interstitial myocarditis with endocardial thrombosis and mild thickening of the epicardium. The importance of the effect of large daily doses of digitalis preparations is emphasized.

Book Notices

The Biology of Melanomas. By Myron Gordon, and others. Volume IV, Special Publications of the New York Academy of Sciences. Edited by Roy Waldo Miner, Myron Gordon, and Lothar Salin. Being the results of a Conference on The Biology of Normal and Atypical Pigment Cell Growth, held by the Section of Biology of The New York Academy of Sciences November 15 and 16, 1946, New York City. Fabrikoid. Price, $5. Pp. 466, with 107 plates. New York Academy of Sciences, Central Park West at 79th St., New York 24, 1948.

This book is an excellent compilation of material presented at a conference on the "Biology of Normal and Atypical Pigment Cell Growth" held by the section of biology of the New York Academy of Sciences, Nov. 15 and 16, 1946, New York City. Each author, as an active investigator on a phase of pigment cell growth and on development of melanoma, prepared a paper or papers which served as focal points around which the discussions were conducted. These papers have been collected and published as "The Biology of Melanomas."

Thus, all phases of the subject are presented by authorities in their respective fields. The reader is presented first with developmental subjects, followed shortly by a direct introduction to the clinical aspects. Cytologic and genetic studies on the problem are rather well covered, as are the endocrinologic, physiologic and chemical sides. Of particular interest to the clinician are the presentations by Masson, Becker, Pack, MacDonald and Blum. These authors represent a vast total experience, and each has managed to write concisely and thoroughly. The result is a single handbook on melanomas, and for that reason alone is unique among similar textbooks. It should serve as an excellent starting point, or reference work, for beginner and expert alike.

The only criticism is leveled not at the content but the binding. In the text supplied the reviewer, an occasional page was incompletely attached. In general the printing of the text and the illustrations were commendable. Mention is not made of the so-called junction nevus, thought by some investigators at least to be one of the important precursors of the malignant melanoma.

Since the volume contains the points of view of so many different workers on the melanoma problem, it should prove of great interest to all physicians interested in keeping abreast of the times, and especially to those who are responsible for the treatment of benign and malignant melanomas.

Diagnostic Procedures for Virus and Rickettsial Diseases. Thomas Francis, Jr., M.D., Chairman, Committee on Diagnostic Procedures for Virus and Rickettsial Diseases, American Public Health Association. Fabrikoid. Price, $4. Pp. 347, with 20 illustrations. American Public Health Association, 1790 Broadway, New York 19, 1948.

This volume was brought out in recognition of the need for collecting in one source the methodology basic to the laboratory diagnosis of viral and rickettsial diseases. Although designed primarily as a ready reference work for the laboratory worker, it contains much practical information with which the physician should be familiar if he is to keep abreast of the rapid advances being made in this field.

The book represents "a trial flight of a limited nature," and the method of presentation is a part of the experiment. As is pointed out in the preface, there is much repetition as concerns technics; the methods of inoculating embryonated eggs, the technics of the neutralization and the complement fixation tests are described in greater or lesser detail in a number of chapters. While such repetitive description is, for various reasons, perhaps desirable, the apparently myriad modifications of basic methods are confusing to the reader unacquainted with virology. A general chapter on the fundamental technics of egg work, the neutralization and the complement fixation tests would probably have been useful as a background. The inclusion of some discussion of filtration and centrifugation, as used in routine work, and a brief description of tissue culture methods would appear desirable.

Fifteen chapters are devoted to the viral diseases, covering those diseases in which a diagnosis by laboratory methods is possible, if not always feasible. In the latter category is poliomyelitis, whose diagnosis requires monkeys and specially equipped research laboratories—since this is beyond the reach of most institutions, the chapter on poliomyelitis (22 pages) might be considered too long in relation to some others, but actually is a fairly concise, and valuable, summary of current methods. The chapter on yellow fever, comprising 21 pages, is devoted in large part (12 pages) to a detailed description of the neutralization tests for this disease; a condensed version would have served as well and permitted amplification of some of the other methods. On the whole, the various diseases covered are adequately treated from the diagnostic standpoint.

In any routine diagnostic laboratory, certain practical considerations are highly important in its operation, and these, while not necessarily treated academically, have not always been given their proper perspective. For example, isolation of viral or rickettsial agents is primarily a concomitant of investigative work; from the standpoint of a laboratory concerned primarily with diagnosis, isolation of an agent is warranted only under special circumstances, since its recovery seldom provides information which cannot be obtained more simply and with less expense by serologic methods. Similarly, the dictum that serum after collection should immediately be frozen on solid carbon dioxide and sent to the laboratory packed in this refrigerant is susceptible of fulfilment only by those research laboratories which collect their own field material; a laboratory dealing with hundreds or thousands of physicians for obvious reasons finds such a procedure impractical of achievement. Storage of serums at below freezing temperatures is also a factor in any laboratory with a large diagnostic load.

The rickettsial diseases are covered in two chapters comprising a total of 34 pages. One chapter deals with the isolation and identification of the rickettsial agents; the other with serologic procedures for the diagnosis of rickettsial diseases. The treatment is clear and succinct, and the two chapters, while brief, are an excellent collation of material widely scattered in the literature of this group of diseases.

Comparative Physiology. By Bradley T. Scheer, Ph.D., Assistant Professor of Biochemistry, University of Southern California, Los Angeles. Cloth. Price, $6. Pp. 563, with 72 illustrations. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W. C. 2, 1948.

This new book, written as a textbook for an advanced university course in comparative physiology, will interest the student of mammalian physiology, collecting, as it does, the scattered literature on the physiology of the so-called lower animals.

After an opening chapter on the biochemical and physiologic processes generally thought to be common to all animals, the author surveys the animal kingdom from protozoa through vertebrates, taking up, in turn, the protozoa, the multicellular acelomate animals (the sponges, coelenterates, flatworms and roundworms), the Mollusca and the Annelida. There follow two chapters on the Arthropoda—the first dealing with the Crustacea in general and Limulus, the horse shoe crab in particular, and the second dealing with the insects. One chapter is devoted to the Echinodermata and two to the Vertebrata.

Within each chapter the physiology of each of these groups of animals is taken up under such headings as nutrition, feeding, digestion, circulation, respiration, metabolism, excretion, regulation of the internal environment, neuromuscular systems, central nervous systems, locomotions, sense organs and behavior.

At the end of each chapter, and in a final concluding chapter, there are summaries in which the salient features of each phylum are discussed. Particular attention is paid to the important ecologic and evolutionary developments within each phylum.

This arrangement of material enables the author to summarize the existing information and thus present a uniform picture of the physiology of each animal type. It points up the utility of particular physiologic adjustments in terms of the ecologic environment and of the behavior of the animal. Finally, it enables the author to interpret, by comparative methods, the physiologic as well as the morphologic changes which have occurred during the course of evolution.

Much of the latter interpretation is put forth frankly as hypothesis, in the hope that further experimental work will be stimulated. It is clear from a reading of the book that such further work is vitally needed. Virtually no information of a physiologic nature is available about many animal types. Thus, although ten different phyla are discussed, almost a third of the book is devoted to one class, the Vertebrata.

There is an appendix giving a broad classification of animals, a species index and a subject index. Although there are over eight hundred references, there is no author index.

Hipófisis y crecimiento (estudio experimental). Por Héctor E. J. Houssay. Paper. Pp. 293, with 68 illustrations. El Ateneo. Córdoba 2099, Buenos Aires, 1947.

This is an interesting and valuable monograph from the pen of the son of Dr. Bernardo Houssay, who is so well known to the world of science. He was helped by his mother, also a physician. He first reviews the effects of hypophysectomy on the growth of animals, mainly puppies. The failures in growth seem to be due particularly to an insufficiency of function in the pars distalis. The defective growth was not modified by the daily ingestion of fresh beef hypophysis, but it was corrected by the injection of extracts of the anterior hypophysis. Houssay described the appearance of the puppies which failed to grow. He studied the defective calcification of their bones. Much of the failure to grow shows in the cartilage. There is a tendency to retain the first temporary teeth. There is a tendency also to adiposity. Sometimes there is infiltration of fat into the liver. The skin may be thick and infiltrated. The hair remains infantile. There may be some failure of development of erythrocytes and hemoglobin. There are, of course, marked alterations in the development of the endocrine glands. The thyroid gland is small, pale and undeveloped. The ovaries and testicles are small. Parts of the adrenals are atrophic. The basal metabolic rate is low. The metabolism of protein is deficient, and this has much to do with the failure in growth. The excretion of nitrogen, creatinine and phosphates is low. There are decided changes in the metabolism of carbohydrates. The blood sugar falls rapidly during fasting, and the animals are highly sensitive to insulin or phlorizin. Occasionally there is transient polyuria. The blood calcium is normal. The serum potassium tends to be low. The animals tend to be apathetic, slow, timid and foolish. They are abnormally sensitive to infection. Often they lose their appetite.

There is a chapter on the effects of hypophysial disease in man, and there is a large bibliography.

The Digestive Tract in Roentgenology. By Jacob Buckstein, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York. Fabrikoid. Price, $16. Pp. 889, with 1030 illustrations. J. B. Lippincott Co., 227-231 S. 6th St., Philadelphia 5, 1948.

This revised edition of a well known textbook presents many additional roentgenographic data on the gastrointestinal tract and associated structures. The book is well written and contains many studies of extreme interest to the radiologist and gastroenterologist. Each section contains a brief review of the normal roentgenologic anatomy as well as roentgenographic technic. Case histories accompany the illustrations, giving pertinent clinical differential points in a brief but adequate summary.

The reproductions of the roentgenograms have been done unusually well and are very clear. Many photographs of specimens are included to complete the case studies and to permit a more thorough correlation of the pathology and the roentgenographic appearance. The reproductions demonstrate the roentgenographic appearance of many phases of both the common and the unusual disease conditions of the gastrointestinal tract.

The roentgenograms illustrate almost all the lesions encountered in the alimentary tract in the adult. The author, however, has neglected to include a study of the postoperative appearance of the colon and esophagus, which may be an extremely difficult problem to evaluate from a roentgenographic standpoint. The studies of the gastrointestinal tract of the infant include the more common lesions encountered, but they are covered in a rather sketchy fashion. Many of the problems encountered in the study of the gastrointestinal tract of the infant and child are omitted completely.

The section on cholangiography again emphasizes the value of the procedure along with valuable notes on the proper technic. The small intestinal lesions are thoroughly covered. The studies presented are adequate, but improvement could be accomplished by the reproduction of spot film roentgenograms for study of the changes noted at the fluoroscopic examination.

Most of the diagnostic procedures are covered well, and the author does an excellent job of covering the multitude of pathologic changes encountered in the gastrointestinal tract. The material is presented in a clear and concise manner which makes for easy reading.

Gardiner's Handbook of Skin Disease. Revised by John Kinnear, O.B.E., T.D., M.D., Physician for Diseases of the Skin, Dundee Royal Infirmary, Dundee. Fifth edition. Cloth. Price, $4.50. Pp. 250, with 100 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

The reader will find this book interesting but not of great practical value. The interest lies in the author's descriptive writing and in his broad concept of dermatology, both of which will appeal to the practitioner rather than to the undergraduate student. As in most handbooks which try to cover a vast field in small space, the descriptions and discussions are much too brief and there are no references to pertinent literature. Emphasis is placed on the common dermatoses, and many of the newer developments in dermatology have been included in this edition, but the author's methods of treatment differ somewhat from those practiced in this country. The book does have the virtue of being a personal work in every sense, reflecting the author's views and experience both in civilian and military practice. As such, it should be a worth while addition to any one's dermatologic library.

The Clinical Picture of Thyrotoxicosis. By Peter McEwan, M.A., M.B., Ch.B. Cloth. Price, 15s. Pp. 127, with illustrations. Oliver & Boyd, Ltd., Tweeddale Court, 14 High St., Edinburgh 1, 1948.

This small volume represents the effort of a Yorkshire surgeon to portray the clinical picture of thyrotoxicosis from a "practical" point of view. It is highly personalized, and is based on the author's experience with about two thousand thyroidectomies over a period of twenty-five years. It contains twenty-five sections dealing with such aspects of thyrotoxicosis as the classical signs and symptoms, the cardiac state, the basal metabolic rate, ocular phenomena, thyrotoxicosis and pregnancy, the thyrotoxic crisis, differential diagnostic problems, and general considerations of surgical treatment and the use of thiouracil and related compounds. The twenty-fourth section is devoted to an attempt to analyze and interpret the mortality statistics for thyroid disease from the office of the Registrar-General for England and Wales from 1913 through 1945.

Unfortunately this effort possesses many faults and few virtues. The author's treatment of his subject is based almost entirely on personal impressions which are submitted with practically no statistical data for support. There is no discussion of pathology or pathologic physiology, and the bibliography is scant, with little reference to the important advances in thyroid disease made by American investigators. The author's case reports are so sketchily presented and poorly documented that no critical evaluation of them is possible. Some of his statements are remarkable, and certain controversial points are treated dogmatically; thus, he recommends thyroidectomy for all pregnant thyrotoxic patients, and gives quinidine a blanket endorsement in the treatment of postoperative thyrotoxic auricular fibrillation. He has entirely abandoned the use of basal metabolism determination in diagnosis. He condemns the use of iodine for differential diagnosis. He states that he has never seen coexistent thyrotoxicosis and active pulmonary tuberculosis. On page 28 he states, "The irregular pulse carries with it, in my experience, no special risk"; on page 117, "It is justifiable to infer that auricular fibrillation is a serious complication of thyrotoxicosis."

There is no discussion of the management or of the differential diagnosis of thyrotoxic heart failure, and no consideration of diabetes, avitaminosis or hepatic damage in thyrotoxicosis.

An unjustifiable attempt is made to create specific symptom patterns for certain occasional complaints or manifestations which are by no means characteristic of thyrotoxicosis. Thus, there are descriptions of the typical headache, the voice changes, abdominal, extremity and back pains, and urinary symptoms which are alleged to be frequent components of a specific thyrotoxic symptom complex. With due allowance for geographic variations in the thyrotoxic syndrome as it exists in England and the United States, it will be difficult to agree with many of the author's impressions and conclusions, and his book cannot be considered as an important contribution to the literature of thyroid disease.

The Sulphonamides and Allied Compounds. By Elmore H. Northey, Ph.D., Administrative Director, Stamford Research Laboratories, American Cyanamid Company, Stamford, Conn. American Chemical Society Monograph Series. Cloth. Price, $12.50. Pp. 660, with 8 illustrations. Reinhold Pub. Corp., 330 W. 42nd St., New York 18, 1948.

The information contained in the monograph makes available to the medical profession an accurate digest of the work done in a large and important chemotherapeutic field. It also permits a proper evaluation of that work and points out certain areas in which additional research may be profitable.

The monograph gives a fairly complete survey of the experimental work in the field of sulfonamides and related compounds. The book is divided into twelve chapters, seven of which are devoted to the chemistry and pharmacology of simple and complex sulfanilamide derivatives and of sulfones and related compounds. Most of the sulfonamides and sulfones which have been prepared and tested are arranged in convenient tables which list their activities with respect to various organisms and give appropriate references. The compiled material is grouped into 323 tables and contains 2668 references.

The volume also includes chapters on the experimental method used in the evaluation of chemotherapeutic activity, the relationship of structure to activity, theories concerning the mechanism of the action of sulfonamides and sulfones and a clinical evaluation of the sulfonamide drugs.

Foundations of Neuropsychiatry. By Stanley Cobb, A.B., M.D., Bullard Professor of Neuropathology, Harvard Medical School, Boston. Fourth edition of the work formerly known as A Preface to Nervous Disease. Cloth. Price, $2.50. Pp. 260, with 13 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

Any book that reaches a fourth edition must be able to satisfy a need in American medicine. That certainly is true of Dr. Cobb's, "Foundations of Neuropsychiatry." In simple language he covers the basic fundamentals that a student of the nervous system needs to know. If there is any criticism, it is that not enough of the psychologic foundations of psychiatry itself are included. However, for the audience toward which this book is directed it is exceedingly satisfactory.

Practical Bacteriology, Hematology, and Parasitology. By E. R. Stitt, M.D., Ph.M., Sc.D., Paul W. Clough, M.D., Physician-in-Charge of the Diagnostic Clinic, Johns Hopkins Hospital, Baltimore, Sara E. Branham, M.D., Ph.D., Sc.D., Senior Bacteriologist, National Institute of Health, and others. Tenth edition. Fabrikoid. Price, $10. Pp. 991, with 765 illustrations. The Blakiston Co., 1012 Walnut St., Philadelphia 5; Toronto 2, 1948.

Fortunately, the original author is still living to enjoy the popularity of this book, although it first appeared some forty years ago. Each of the many editions has given more space to the interpretation and diagnostic significance of laboratory procedures. The various sections of the book have been revised, and some sections have been entirely rewritten. The chapter on examination of the cerebrospinal fluid has been extensively revised, and a new method of preparing colloidal gold solution now in use in the Naval Medical School laboratories is included. Dr. Reuben Kahn has reviewed the section dealing with the Kahn flocculation test. Dr. John Kolmer reviewed the technic of the Kolmer complement fixation test. The chapter on filtrable viruses has been rewritten by Dr. Paul W. Clough and new material added, particularly on poliomyelitis, influenza, infectious hepatitis, the encephalitides and primary atypical pneumonia. The section on rickettsial diseases was written by Dr. Norman H. Topping and includes descriptions of Q fever and scrub typhus. Some material in the previous edition has been omitted from this one to make room for recent advances in this field. In this way, it has been possible to keep the size of the book about the same.

Dermatologic Therapy in General Practice. By Marion B. Sulzberger, M.D., Professor of Clinical Dermatology and Syphilology and Director, Department of Dematology and Syphilology, New York Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, New York, and Jack Wolf, M.D., Attending Dermatologist and Syphilologist and Chief of Service, New York Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital. Third edition. Cloth. Price, $7.75. Pp. 663, with 66 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1948.

This third edition brings up to date the important advances in dermatologic and antisyphilitic therapy. It is written primarily for the general practitioner and contains information which, if wisely used, will enable him adequately to treat most of the common dermatoses. In a logical and straightforward manner the principles of therapy are discussed. Thus, before specific measures are mentioned, the first chapters are devoted to general principles of topical medication and physical therapy. The authors make an excellent attempt to enable the reader to understand the reasons for using each type of local medication so that it may be applied with an intelligent understanding for the needs of dermatologic patients. Whole chapters are devoted to the diagnosis and treatment of such disorders as: the eczematous dermatoses, urticaria, atopic eczema, fungus diseases, acne vulgaris, the pyodermas, seborrheic dermatitis, parasitic diseases and new growths. The chapters on syphilis deal with the clinical features of the disease as well as newer methods of treatment. This book is not one for reference only but for the daily use of all who feel the need to be better informed about the management of dermatologic patients.

Industrial Psychology. By John Tiffin, Ph.D., Professor of Industrial Psychology, Purdue University, Lafayette, Indiana. Second edition. Cloth. Price, $5.35. Pp. 553, with 140 illustrations. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, 1947.

One of the major functions of the physician in industry is to match the requirements of jobs with the physical, mental and emotional abilities of employees. Industrial psychology deals essentially with the temperamental adaptations and aptitudes of persons for jobs. Tiffin's current revision is an excellent compilation of present uses of psychology in employment procedure and in the larger problems of industrial human relations. Every chapter contains much new material. The physician in industry will profit by his discussions of the technics of interviewing, employee testing, job analysis and evaluation, training methods and of the factors governing efficiency, productive work, safety and morale.

Manual técnico de hemoterapia para médicos generales y estudiantes. Por el Dr. Augusto M. Romero Alvarez, jefe del banco de sangre regional del oeste (Instituto de cirugía de la Provincia de Buenos Aires, Haedo, F. C. O.). Paper. Pp. 103, with 23 illustrations. Productos Roche S. A., Buenos Aires, [1948].

This is a handy booklet, well illustrated and of practical value for all physicians who from time to time want to give transfusions. The author states that the first physician to give a transfusion of citrated blood was Dr. Luis Agote of Buenos Aires. This was given on Nov. 9, 1914. The first man to show that one should transfuse only human blood into man was Dr. Blundell. He wrote in 1828. This is a handy little book of 103 pages and, if translated, might well be popular in this country.

Hawaii Diet Manual, Hawaii Dietetic Association. Compiled by Diet Therapy Committee. Boards. Loose-leaf. Price, $5. Pp. 192. Hawaii Dietetic Association, Honolulu, 1947.

This book is a guide for diet therapy in the territory of Hawaii with modifications of standard procedure suited to the locality. Also listed are diets peculiar to national groups found in Hawaii. This enables the therapist to prescribe an effective diet with due consideration for the patient's customs and food preferences. This work will undoubtedly find wide use in Hawaii by the physicians, dietitians, nurses and other interested professional groups working there.

Pædiatrics for Nurses. By Arthur G. Watkins, M.D., F.R.C.P., Physician in Children's Diseases, Cardiff Royal Infirmary, Cardiff. Cloth. Price, $3.50. Pp. 192, with 22 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

This is an excellent small monograph of pediatrics. The material is well organized and presented in an interesting manner. Schools of nursing will find it a good text to use.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

INDICATIONS FOR DIGITALIS

To the Editor:—Is digitalis (any form) indicated or advisable in the following conditions: (1) paroxysmal auricular tachycardia (to avoid future attacks); (2) when electrocardiograph evidence is present of strain of the left and/or the right side of the heart with hypertension (diastolic) but with no definite clinical evidence of failure other than dyspnea; (3) when systolic pressure is high, diastolic is normal, with respiratory distress and numerous dry rales of the chest but with normal circulation time? There is no other evidence of failure.

Anthony M. Susinno, M.D., Palisades Park, N. J.

Answer.—In simple auricular or atrioventricular paroxysmal tachycardia in which attacks occur frequently (once per week or more often, for example) digitalization by any method sometimes greatly reduces the frequency of the seizures. There is no objection to its use for this purpose if it is effective and if the repeated attacks make the patient particularly uncomfortable. In paroxysmal auricular fibrillation or flutter in which the attacks are frequent, digitalization may not reduce the number of the attacks but it usually conspicuously reduces the ventricular rate during them and thus reduces or prevents the symptoms which they produce. Quinidine may also be tried in any of these circumstances; it is particularly effective in paroxysmal ventricular tachycardia, in which the administration of digitalis is usually inadvisable.

No type of change in the form of the electrocardiogram can be regarded under any circumstances as an indication for the administration of digitalis. The electrocardiographic changes referred to as indicative of strain of right or left side of the heart are not, by themselves, a reason for giving this drug, regardless of the level of the blood pressure. Dyspnea, when there are strong reasons for believing that it is of cardiac origin, is an indication for giving digitalis. In most cases, however, dyspnea which is brought about by cardiac weakness increases rather rapidly in severity. The complaint of shortness of breath is so common and arises in so many different ways that it should be ascribed to beginning heart failure only after careful investigation.

Respiratory distress with dry rales is more often due to infection of the respiratory tract or bronchial spasm than to cardiac failure alone. In some patients with pulmonary congestion of cardiac origin a kind of asthmatic bronchitis develops which is rather persistent and tends to clear up as the cardiac condition improves. This clinical syndrome is much less serious than respiratory distress with distinctly moist rales, but it may be helped by the administration of digitalis and aminophylline. Epinephrine may give relief but should not ordinarily be used in cases of the kind referred to.

ERYTHROBLASTOSIS

To the Editor:—I have a 29 year old white patient, who had one pregnancy three years ago; a normal full term male infant was delivered uneventfully. She is Rh negative and her husband is Rh positive. She is now two and one-half months pregnant. History of an abortion is absent. What course should be pursued in caring for her?

M.D., Tennessee.

Answer.—The pregnant woman should be tested immediately for Rh antibodies. If the result of the test is negative, it should be repeated at frequent intervals throughout the pregnancy. There is a relation between the time of appearance of Rh antibodies in pregnancy and the severity of disease in the fetus and infant. The height of the titer has a similar significance. On the other hand, finding of antibodies during the first trimester suggests strongly that they are due to the immunizing action of a preceding pregnancy. In such case the interpretation is made more difficult. A history of a previous transfusion of Rh-positive blood makes the prognosis worse.

The parents of the husband and the first child should be tested, and if any of them is found Rh negative, heterozygosity of the husband is established. That offers a good chance (up to 50 per cent) of an Rh-negative infant, not subject to fetal erythroblastosis due to Rh incompatibility. Heterozygosity of the husband is not excluded even if his parents are Rh positive. If the husband is Rh_1 (CDe), testing his blood with the rare anti-hr′ (anti-c) serum may be another means of establishing heterozygosity. He is heterozygous Rh positive if he is hr′ positive. He is homozygous Rh positive if he is hr′ negative and all his children will be Rh positive and more likely to be affected by erythroblastosis. If antibody tests during pregnancy suggest the possibility of disease in the fetus, Rh-negative blood of suitable blood group should be made available at the time of delivery to permit prompt transfusion if signs of disease are present.

The mother does not require any special care, because her well-being is not affected by the process of Rh sensitization. If she were in need of a transfusion, only Rh-negative blood must be used.

The answer to the question regarding the mother's chances of successful termination of this pregnancy depends partly on the circumstances discussed previously. On the basis of available statistical data in the absence of a previous history of erythroblastotic children the chances are about 96 in a hundred that the child will not be affected.

BISMUTH SALICYLATE

To the Editor:—What information can you give me as to the toxic effects of prolonged intramuscular injection of salicylate in oil, at a dosage of 2 cc. per week? How long may such a dose safely be given? Are there any references regarding this medication in the treatment of psoriasis?

M.D., New York.

Answer.—Presumably from the fact that it is administered intramuscularly and in oil, the query refers to bismuth salicylate. The usual practice is to administer insoluble bismuth in courses of ten to fifteen weekly injections, followed by a rest period of one month. Some physicians administer it regularly without rest periods for a year or longer, provided, of course, that there is no evidence of harm from its use. Whenever bismuth is used, the urine should be examined at frequent intervals for evidence of renal damage and the gums and tongue should be examined for evidence of blue lines. Like other heavy metals, the drug may also produce toxic reactions in skin, liver, nervous system and hemopoietic system and such local reactions as abscess formation or arterial emboli. Bismuth compound, like numerous other preparations, has been used for the treatment of psoriasis, but has no special virtue.

SULFUR DIOXIDE POISONING

To the Editor:—Please furnish information on sulfur dioxide inhalation and poisoning. What are the lethal dose, toxicity and symptoms caused by inhalation, complications and disability?

M. J. Stec, M.D., Scranton, Pa.

Answer.—Sulfur dioxide is one of the more active irritant gasses and probably produces greater pain than almost any other industrial gas. Irritation begins at about the level of 10 parts per million. Exposure at any higher level over long periods will lead to physiologic response. At and above 500 parts per million even short exposures are dangerous. On its reaching mucous membranes the moisture there present combines with the sulfur dioxide, suggesting that the ultimate action is that of the sulfur acids. In gross concentrations, spasm of the laryngeal area somewhat effectively bars off the entry of the gas and gives rise to the term "irrespirable." It thus comes about that the tissues of the upper respiratory tract may be more involved than the lungs themselves. From lower and commoner concentrations, there may promptly arise inflammation of all membranes, violent coughing and sneezing, pharyngitis, laryngitis, bronchitis or pneumonitis with or without pulmonary edema. Bronchial pneumonia may arise. Among those long exposed there may appear digestive disturbances, impaired senses of smell and taste, excessive urinary acidity, increased fatigability and dyspnea. Action is not limited to the respiratory tract and may involve the eyes. The skin is little damaged, but sulfur dioxide in water may provoke dermatitis; a chronic state has been described resembling furunculosis. The action of sulfur dioxide is not persistent, so that a true chronic state does not arise except that chronic exposure perpetuates acute manifestations. After cessation of exposure all manifestations tend to disappear. However, on rare occasions it is possibly true that a condition of allergy, or akin to allergy, develops to the end that subsequent trivial exposures excite responses out of proportion to those expectable.

In the use of sulfur dioxide as a liquid, as in refrigeration, minor leaks may lead to sulfur dioxide spurts, with rapid and painful freezing of eyeballs. Contrary to some common belief, sulfur dioxide involvement of the lung does not predispose to, or accelerate, tuberculosis. Workers using this gas apparently acquire a fair degree of tolerance. Actually a lack of response may result merely from the coating of the respiratory passages by a layer of tenacious secretion.

SUBACUTE COLITIS

To the Editor:—A white woman, aged 38, has been suffering from diarrhea, epigastric pain and low grade fever for the past five months. There are six to ten stools almost every day. (Only occasionally are there one to two stools in twenty-four hours.) Sometimes the stools are normal in shape and appearance: often there is mucus, and some stools appear purulent. These, microscopically, are practically pure pus, mostly polymorphonuclear leukocytes. Very rarely is there occult blood. The epigastric pain occurs almost daily, sometimes radiating to one or both shoulders. Often the pain is apparently entirely thoracic. The pain is always colicky and may last for several hours. The temperature ranges from 99 to 101 F. Proctoscopic examination on two occasions did not reveal any abnormality, nor did barium enema. Barium compound orally showed irritability of the bulb of duodenum. Standard therapy for peptic ulcer has had no effect on symptoms. Examinations of stool did not show parasites or amebas. The white blood cell count is 12,000, and the sedimentation rate varies from 25 to 40 in one hour. Antispasmodics (belladonna, papaverine) and usual gastric "sedative powders" have been ineffectual. A series of eight colonic irrigations had been undergone and to the naked eye produced much mucus, pus and, on two occasions, what the therapist called "gravel." A consultant made the diagnosis of "irritable bowel" and recommended the antispasmodics and colonic irrigations, as mentioned. While this diagnosis seemed untenable in view of the fever and purulent stools, his advice was carried out, with no effect on symptoms. A cholecystectomy was done four years ago (because of gallstones) and the health has been excellent until the present illness. The history strongly suggested ulcerative colitis to me, but this cannot be demonstrated proctoscopically or roentgenologically. What further studies are indicated? Is the use of penicillin or the sulfonamide compounds indicated on an empiric basis? If so, which is preferable? If penicillin is advised, what dosage is recommended?

M.D., New York.

Answer.—The accurate diagnosis of chronic diarrhea, fever and abdominal pain occasionally is very difficult and accomplished only after prolonged observation and study. Since regional enteritis may cause colicky abdominal pain, diarrhea, fever, leukocytosis, an increased sedimentation rate and blood in the feces, further effort should be made to visualize the small bowel by barium enema and by serial roentgenograms after the oral ingestion of barium compound. Additional information regarding the physical findings, including the pelvic and rectal examinations, would be helpful. A mass in the lower part of the abdomen or high in the pelvis, for example, would support the diagnosis of regional enteritis. Repeated cultures should be made of the feces for pathogenic bacteria, including Salmonella and dysentery organisms, to exclude some type of enteric infection. Cultures of the blood and urine and the various serum agglutination reactions are indicated in view of the unexplained fever. Subphrenic, hepatic or perinephric abscess might be considered, as well as a pelvic abscess discharging into the rectum. The radiation of pain to the shoulders suggests diaphragmatic irritation. Tumors of the gastrointestinal tract or neoplasms arising in the pelvis and involving the bowel sometimes manifest themselves primarily by fever. The various diagnostic procedures should be repeated, especially the roentgen examinations of the small intestine and colon and the proctoscopic examination at intervals. The most likely diagnosis with the evidence offered is regional enteritis or colitis.

Management, in the absence of a specific etiologic factor, is symptomatic. The use of a bland, low residue, nonlaxative diet is indicated. Antispasmodics and sedatives, such as phenobarbital, ¼ to ½ grain (15 to 30 mg.), and extract of belladonna, ⅛ grain (8 mg.), four times daily may be helpful. Colonic irrigations are not indicated. Sulfonamide compounds and penicillin should be withheld until a specific indication arises. More definitive therapy depends on more precise diagnosis.

COCCIDIOIDOMYCOSIS

To the Editor:—Is there any specific treatment for coccidioidomycosis? Is serum for the coccidioidin skin test available?

Erich Seligmann, M.D., Whitehall, N. Y.

Answer.—1. Specific treatment for coccidioidomycosis is lacking. The object of treatment in the primary and disseminated forms is to assist the patient in focalizing his lesions. This is best accomplished by bed rest, adequate diet and symptomatic treatment during the stage of activity of the disease. Activity is indicated by fever, elevated erythrocyte sedimentation rate, rising titer of complement-fixing antibodies and progression or instability of the pulmonary lesions as determined by serial roentgenograms. All drugs used thus far, including the sulfonamide compounds, penicillin and streptomycin, have been ineffective. Vaccine treatment as recommended by Jacobson and immunotransfusion have not been generally accepted as influencing the course of the disease. Of the benign pulmonary residues, such as nodules and cavitation, only the latter may rarely require treatment and then only for severe or recurrent hemoptysis. Pneumothorax, phrenicolysis and immobilization of the thorax with weighted bags have been used. Such measures are difficult to evaluate because of the natural tendency to spontaneous healing, even after long periods. It is doubtful whether more radical procedures, such as used in the treatment of tuberculous cavitation, are ever justifiable.

2. Material for the coccidioidin skin test is not available commercially. Technical difficulties in production and a restricted market have delayed or prevented pharmaceutic houses from producing coccidioidin commercially. Teaching institutions or Veterans' Administration hospitals may have available a small supply of coccidioidin.

SPEECH DELAY

To the Editor:—I have a patient, 7½ years old, who cannot talk. The boy is able to make sounds and can laugh. Occasionally he will say a word. *His parents have taken him to* Children's Hospital *and to a speech* specialist in Boston. The answer received is that there is nothing that can be done, but that the boy will speak in time. I have not found any abnormal condition. Is there any way in which this boy can be tested to find out whether he will ever speak? Please suggest a method of handling this boy.

Robert H. Goldman, M.D., Leominster, Mass.

Answer.—Delayed speech may be due to mental retardation or it may be due to lack of hearing to such a degree that the child cannot learn speech or it may be due to neither of these causes, in which case it is described as motor speech delay or delay in learning to speak. Children of 7 sometimes do not speak, though later they learn to speak clearly. There are clinics in Boston in which these conditions are recognized, and adequate treatment is planned wherever possible. One of these clinics is at the Children's Hospital; another is the Language Clinic at the Massachusetts General Hospital. Either of these clinics could give the doctor and the family involved good advice. The condition is often baffling.

HISTOPLASMOSIS

To the Editor:—I examined a white woman aged 35 years and her daughter aged 6. In 1943 histoplasmosis organisms were found in large quantities in the spinal fluid of the child and in the blood of the mother. An encephalogram showed dilatation of the lateral and third ventricles of the child. The mother was advised to have no more children and underwent a sterilization operation. In the child an amentia with athetoid quadriplegia has developed. The mother has remained in good health for the past five years. There have been no clinical efforts to determine the presence or absence of the infection in mother or child since 1943. Your opinion is requested as to the advisability of the mother's submission to any type of clinical test for the presence or absence of her infection. If she still carries the fungus, is there any effective treatment?

M.D., Mississippi.

Answer.—Infection with Histoplasma capsulatum has been observed only once before to give rise to clinical disease in members of the same family. McLeod and associates reported its occurrence in siblings (*J. Pediat.* **28**:275, 1946). The apparent simultaneous involvement of a mother and her child is, therefore, unique so far as is known. Knowledge of the epidemiology of histoplasmosis is incomplete, and it is suggested that details of these cases be reported for their possible bearing on this aspect of the problem.

It would be most important to establish whether or not these patients still harbor the organism. H. capsulatum may be isolated by various cultural methods (Parsons, R. J., and Zarafonetis, C. J. D.: *Arch. Int. Med.* **75**:1 [Jan.] 1945). Sources of inoculum include the blood, bone marrow, spinal fluid, sputum and biopsy material from lymph nodes or superficial ulcerations. Blood agar slants (incubated at 37.5 C.) and Sabouraud's mediums (incubated at room temperature) are commonly used for cultivation of the organism. Yeastlike growth occurs on the former, while the latter yields the characteristic mycelial phase.

Microscopic examination of sections of biopsy material may reveal encapsulated intracellular organisms. Their presence cannot be considered diagnostic, however, since there are other organisms which at times are morphologically indistinguishable from H. capsulatum in tissue sections. The diagnosis of histoplasmosis can, therefore, be established with certainty only by strain isolation.

Additional diagnostic aid may be forthcoming from serologic tests for histoplasmosis. Complement fixation (Salvin, S. B.: *Proc. Soc. Exper. Biol. & Med.* **66**:342, 1947) and precipitin (Pates, A. L.: *Science*, to be published) reactions have been obtained in tests on serums from patients and animals infected with the causative agent. These tests are, however, still in the experimental phase.

Cutaneous tests with histoplasmin antigens will contribute nothing toward establishing the presence or absence of active infection in these patients. A brief discussion of the diagnostic value of histoplasmin cutaneous tests may be found in this department of The Journal, Oct. 25, 1947, page 543. In the same reference are listed the various therapeutic agents which have been tried, generally without success, in the treatment of histoplasmosis. In addition, J. H. Seabury (unpublished work) has used "promin" (sodium p,-p'-diaminodiphenylsulfone-N,N'-didextrose sulfonate) in the treatment of 2 patients with histoplasmosis. "Promin" therapy has also been undertaken in experimentally infected dogs. Preliminary results appear encouraging, and further studies are under way. Details of the "promin" treatment schedules employed by Dr. Seabury may be obtained by an inquiry addressed to him at the Louisiana State University School of Medicine, New Orleans.

NEUROSIS

To the Editor:—A white man aged 28 years had complained for many years of a peculiar skin sensation which he is unable to describe exactly. The nature of his complaint—which is not a real pruritus, though he uses the word "itching" occasionally—is best described as the patient's being "skin conscious." His skin is at times so sensitive that he becomes irritated when anybody, even his young wife or baby, touches him. He feels best with all clothing removed. Neurologically he was found to be normal. Tests of spinal fluid and blood serum were negative in result. Clinical studies showed at some time the following abnormalities: (1) prostatitis, chronic, which responded to treatment and did not recur; (2) moderately irritable colon; (3) allergy to mushroom, peas, currants, raisins, blackberries, cinnamon, thyme and hops; (4) moderate hyperacidity with loose bowel movements and occasional diarrhea; a complete blood cell count (eighteen months previously) showed 90 per cent hemoglobin and 3,900,000 red blood cells without poikylocytosis and anisacytosis. After several months of liver therapy, the blood was normal; the condition of the skin remained the same. Other treatment consisted of foreign protein, auto hemotherapy, diets, large doses of vitamins A and B, vitamin B complex, ultraviolet radiation, "bellergal" (a proprietary compound of belladona alkaloids, ergotamine tartrate and phenobarbital), "belladenal" (a mixture of belladonna alkaloids and phenobarbital), calcium gluconate, sodium nicotinate, galvanic baths, anti-histaminics and histamine desensitization. A psychiatrist diagnosed conversion syndrome (guilt complex —a brother was killed by gas). The patient termed the treatment unsuccessful and stopped the sessions with the psychiatrist after five sessions. Do you believe this to be a psychosomatic case? If not, what other diagnosis and treatment should be considered? M.D., New York.

Answer.—It would seem that this patient's complaints are entirely psychosomatic in nature. All investigations have failed to establish an organic cause and the usual treatment measures have been used to no avail. Since a diagnosis of conversion syndrome has been made in his case, he should be encouraged to cooperate with his psychiatrist in an attempt to solve the problem.

CIGARET HABIT

To the Editor:—A patient is desirous of discontinuing smoking of cigarets. He is of a nervous disposition and thinks that it would be an easier task if some medical aid could be given to him. How can I be of help to this man? M.D., Indiana.

Answer.—The patient who wishes to discontinue the smoking of cigarets may secure instruction and support from reading accounts of successful ex-smokers (Furnas, J. C.: So You're Going to Stop Smoking, New York, Simon & Schuster, 1938). Rinsing the mouth or swabbing the throat with 0.5 per cent silver nitrate, causing distaste on smoking, has been used. Acute symptoms of deprivation or nicotine withdrawal, with tremors and nervousness, suffered by some smokers immediately on cessation of smoking may be lessened by taking candy or otherwise raising the blood sugar and compensating for the lack of habitual adrenal stimulation from nicotine (Cannon, W. B., and others: A Note on the Effect of Nicotine Injection on Adrenal Secretion, *J. Pharmacol. & Exper. Therap.* **3**:379, 1911). The conditioned reflex, or habitual handling of cigarets, may be bridged by chewing gum.

SUSPENSORIES

To the Editor:—What deleterious effects result from continued use of a supporter or a suspensory on testicular function, (*a*) general and (*b*) spermatogenic? M.D., Pennsylvania.

Answer.—Continued use of a supporter or a suspensory should not have deleterious effects on testicular function, either general or spermatogenic. The only exception to this statement would be in an unusual instance in which the use of such a support would cause constriction of the spermatic cord with interference of the normal blood supply of the testes. Such a condition would be intolerable to the patient, and the supporter would be discarded.

PLASTIC REPAIR OF FALLOPIAN TUBES

To the Editor:—A patient, 30 years of age, married ten years, was single when she gave birth to healthy twins. To prevent a recurrence she went to a hospital and had both tubes tied. She now would like to have another child and was told by a physician that an operation can be done to open the tubes and restore normal conditions. Her periods occur regularly but with much pain, which estrogens have not relieved. She also has spastic attacks of angina for relief of which injections of ½ grain (30 mg.) of morphine had to be used. I have not found an answer in any book, of which I have many.

M.D., Washington, D. C.

Answer.—Yes, the patency of the tubes may be restored by a surgical operation, thereby permitting normal intrauterine gestations. This case should be a favorable one for operation, because in all probability there is no infection in the tubes. However, after plastic operations on the tubes there is a relatively high incidence of tubal pregnancies.

PELVIC FRACTURE

To the Editor:—A severe pelvic fracture occurred involving all four pubic rami in a girl 6 years of age. The fractures are healing satisfactorily but are close to growth centers. Will future growth be disturbed so that the pelvic outlet may be distorted? It is important that this possibility be estimated accurately, as litigation is involved.

Ernest E. Myers, M.D., Lexington, Ky.

Answer.—As a rule, fractures of the pelvis even with some distortion do not cause dystocia. In this small child, if the fracture planes did not pass through the epiphysial areas probably growth disturbance will not result. Weight bearing and jumping, with severe jar of the pelvis, should be guarded against in the convalescence until complete bony union of the fracture is developed. Follow-up roentgenograms will show whether growth centers tend to close prematurely. Cesarean section may solve childbearing problems if they arise.

ACNE

To the Editor:—Is penicillin of value in acne simplex or acne vulgaris and, if so, which preparation and dosage are advisable?

M.D., New York.

Answer.—Penicillin apparently has no value in the treatment of simple acne. During the war it was given an extensive trial among service men in the South Pacific area who were incapacitated by severe acne, but with discouraging results.

VISUAL TESTS

To the Editor:—In *The Journal*, April 24, page 1118, the query of Dr. Joseph Bogan appears to have been misunderstood. The reference here, I believe, is to visual values as ordinarily expressed in the standard Snellen symbols and their equivalents denoted in the less conventional method as routinely employed, for instance, by the Naval examiner.

Answering the last part of the query first, to find the equivalent value of any Snellen notation in either method one has simply to determine the value of the unknown, or x. To illustrate:

$$20/25 = x/20$$
$$25x = 400$$
$$x = 16$$

Therefore 16/20 is the equivalent of 20/25. Conversely,

$$16/20 = 20/x$$
$$16x = 400$$
$$x = 25$$

Therefore 20/25 is the equivalent of 16/20. Proceeding in this manner, any equivalent value for a Snellen symbol as expressed in either method will naturally evolve. This will provide the information sought in the first part of Dr. Bogan's query.

It should be borne in mind, however, that this happy parallelism of visual values in the two methods does not go on indefinitely. Using 20 feet for the denominator of necessity restricts the scope of this method, inasmuch as one is now working with values contained within certain prescribed limits; that is, each is an integral unit of the whole, which, in this case, is 20 feet, or a total of 20 foot units (the range then being 20 to 1); hence, to go beyond 1/20 (equivalent 20/400) one would have to alter the original designation and revert to a unity the denominator of which is no longer 20 feet. Accordingly, it is clear that such a method of expressing visual values has its limitations, applying as it does to those persons who are capable of qualitative visual acuteness, and so in this sense is suitable only to a more or less selective group.

Finally, to answer the second part of Dr. Bogan's query, it will suffice to say that in the method using 20 feet for the numerator the test of vision is usually carried out with the examinee at the fixed distance of 20 feet from the chart. In the second method, the examinee approaches the test chart placed 20 feet away, and the distance from the chart when the 20 foot type read by the normal eye at this distance is seen becomes the numerator of the fraction indicating his visual acuity; to wit, 20/20, 12/20, 6/20 and so on to 1/20. J. A. C. Gabriels, M.D., Albany, N. Y.

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EMBOLISM AND THROMBOSIS IN CORONARY HEART DISEASE

Chairman's Address

ALVIN G. FOORD, M.D.
Pasadena, Calif.

The problem of embolism and peripheral venous thrombosis has always been a major one in the treatment of heart disease and particularly of coronary heart disease. This is due to the prevalence of mural thrombi in the chambers of the heart, which may serve as a source of emboli, and to the occurrence of peripheral venous thrombi, especially in the legs. Several articles on the subject have appeared in the literature of the last few years, a splendid summary of which is given by Hellerstein and Martin,[1] who also give their own observations in 160 cases of myocardial infarction occurring in a total of 2,000 autopsies at the University Hospitals in Cleveland. In 45 per cent of the cases in their series there were emboli or thrombi in other parts of the body, a total of one hundred and eleven peripheral thromboembolic lesions being found. In 12 per cent of the cases these were the main cause of death, and in another 15 per cent they were contributory causes of death. In a series of 1,146 autopsied cases collected by the aforementioned authors from the literature up to 1947, the location of thromboembolic lesions following myocardial infarction was: lung, 23.5 per cent; brain, 7.7 per cent; extremities, 5.5 per cent; kidney, 14.4 per cent; spleen, 8.8 per cent, and mesenteric vessels, 1.9 per cent. These figures include all the lesions encountered and do not, of course, represent the number of patients involved, since many showed embolism in more than one organ. Of these, pulmonary embolism is the commonest serious complication of cardiac infarction and in the foregoing summary was the chief cause of death in 10.6 per cent of autopsied cases.

Also in 1947, Mintz and Katz,[2] in a clinical analysis of 572 cases of recent myocardial infarction, found a total incidence of 52 cases of thromboembolism, of which 28 were pulmonic and 13 cerebral. In a series, as yet unpublished, of 1,000 cases of recent myocardial infarction at the Los Angeles County Hospital, Edmondson[3] observed a total of three hundred and twenty-eight manifest embolisms in some part of the body outside of the heart, and of these one hundred and sixty-one were in the lungs, forty-eight in the brain, ten in the mesenteric vessels and twenty-eight in the extremities.

Most of the preceding autopsy material was reported from major cities and included a considerable percentage of patients from public hospitals. With the idea in mind of summarizing the material of a smaller hospital, in a relatively small city, nearly all of the patients of which were private, the following study was made of the autopsy records of the Huntington Memorial Hospital. The autopsy percentage has remained about 65 per cent over the course of years. Since the city of Pasadena has a large proportion of persons of middle age and older, the problem of coronary heart disease is a major one. A review is made of a total of 3,900 autopsies done from January 1931 to May 1948. Of these 727 were in newborn or stillborn infants, leaving 3,173 in older than newborn subjects. Few children or youths were included, and the vast majority of the patients autopsied were over 50 years of age. Most of the patients were born in the Middle West or the East.

The cause of coronary occlusion was, of course, arteriosclerosis, with or without thrombosis, in nearly all of the cases. Two cases of embolism with infarction were encountered. One arose from acute vegetative aortic endocarditis, and a septic embolus in the left circumflex artery lead to infarction plus suppuration with rupture of the heart. The other was a case of infarction due to a bland embolus in the right coronary artery arising from nonbacterial thrombotic endocarditis of the mitral valve, or possibly from a small thrombus in the left auricle, in an emaciated man of 60 with a squamous cell carcinoma of the upper lobe bronchus of the right lung with thoracic lymph node and adrenal metastases.

One case with rupture of the heart following infarction resulted from splitting of the media and hemorrhage within the wall of a nonsclerotic left descending coronary artery. The lesion was identical to splitting of the media in dissecting aneurysms of the aorta. One other case was of an infant of 4 weeks with generalized medial calcification in the arteries, especially the coronary arteries, accompanied with pronounced intimal fibrosis and complete occlusion of the left circumflex artery and recent necrosis of much of the myocardium. A review of this condition was given by Baggenstoss and Keith[4] and by Field.[5] My co-workers and I had

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Read before the Section on Pathology and Physiology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 25, 1948.

[1] Hellerstein, H. K., and Martin, J. W.: Incidence of Thromboembolic Lesions Accompanying Myocardial Infarction, Am. Heart J. **33**: 443-452 (April) 1947.

[2] Mintz, S. S., and Katz, L. N.: Recent Myocardial Infarction: An Analysis of Five Hundred and Seventy-Two Cases, Arch. Int. Med. **80**: 205-237 (Aug.) 1947.

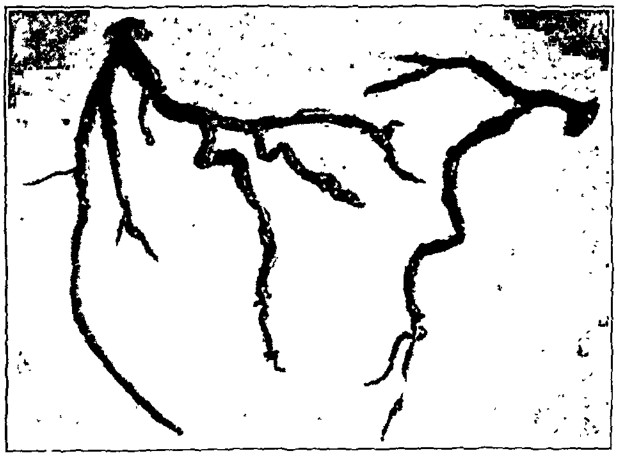
[3] Edmondson, H.: Personal communication to the author.

[4] Baggenstoss, A. H., and Keith, H. W.: Calcification of Arteries of an Infant, J. Pediat. **18**: 95-103 (Jan.) 1941.

[5] Field, M. H.: Medial Calcification of Arteries of Infants, Arch. Path. **42**: 607-619 (Dec.) 1947.

no cases of occlusion of the orifices of the arteries by syphilis. This occurred in 0.8 per cent of cases of coronary obstruction reported by Wartman and Hellerstein.[6] Although these same authors, in a series of 247 cases, observed narrowing and/or occlusion due to rheumatic arteritis in 2 cases, periarteritis nodosa in 7 cases and endarteritis obliterans in 4 cases, none of these conditions was encountered in our material.

Much of the literature on coronary occlusion is based on gross appearance of the arteries involved. It is obvious, however, that necrotic plaques or hemorrhages in plaques may appear grossly like thrombi, and organized canalized thrombi may be called simple narrowing without study under the microscope. Also, it is impossible to cut gross calcified coronary arteries with a knife or scissors without tearing the vessels. Dislodgement of thrombi and distortion is produced, so that accurate observations cannot be made. To avoid these pitfalls we have in the last ten years adopted the policy of removing the coronary arteries in toto (figure), with their mouths in the aorta included, whenever palpation reveals the presence of calcium. These are fixed in formaldehyde solution for two days after the fat is clipped away and then decalcified in a mixture of equal parts of formic acid and 20 per cent sodium citrate for two to three days. When decalcified they are sectioned transversely at narrow intervals of 2 to 3 mm. and described. Representative slices are then embedded for preparation of slides for microscopic study. In this manner one is able to approximate or equal the results obtained by injection methods, as popularized by Schlesinger[7] and lately by Salans and Tweed[8] and Ravin and Geever.[9] With the described technic the myocardium is not disturbed as by the injection process, and microscopic study of blocks taken from various portions can be done on material unchanged by delay and injection fluid. Since using this technic we feel that we can tell rather accurately what has gone on in a coronary artery.



Coronary arteries removed in toto. Transverse sections are made after fixation and decalcification.

Our cases in which death was due to arteriosclerosis fall into four groups: *A*, 315 cases of recent fatal coronary heart disease, including 223 cases of infarction following recent coronary thrombosis, 41 cases of recent infarction without demonstrable thrombosis and 51 cases of recent thrombosis in which death occurred too soon for gross or microscopic evidence of infarction to be seen (women 101, men 214), *B*, 107 cases without recent thrombosis or infarction, but with old infarcts, with death due to cardiac decompensation (women 30, men 77), *C*, 34 cases in which there was neither old nor recent thrombosis but in which death was due to cardiac decompensation, with advanced narrowing of the coronary arteries (women 11, men 33) and *D*, 175 cases with advanced narrowing of the coronaries with or without old infarcts, in which death was due to some other, unrelated, condition without cardiac decompensation (women 53, men 122).

Table 1.—*Age and Sex Grouping in Cases of Coronary Disease*

Group Age.	20 29	30 39	40 49	50 59	60 69	70 79	80 89	90 99	Total	Women
A........	1	1	29	55	106	92	30	1	315	101
B........	0	2	4	11	34	47	9	0	107	30
C........	0	1	1	8	6	11	7	0	34	11
Total......	1	4	34	74	146	150	46	1	456	142

The combined group of 631 cases represents 20 per cent of the cases in which autopsy was done, exclusive of stillborn and newborn infants. Fully an equal number showed moderate degrees of sclerosis, but were not included because the degree of sclerosis had not exceeded 60 per cent of normal diameter in one or more arteries. In Wartman and Hellerstein's series of 2,000 necropsies the coronary arteries were significantly diseased in 25 per cent. If this is true, as it probably is, in other places, the magnitude of the coronary arterial problem is certainly manifest.

The age and sex of the patients in the first three groups are given in table 1. The age of those in group D is of little significance because death resulted from a variety of conditions, including various infections, ruptured aneurysms, malignant conditions and blood dyscrasias. Fully 65 per cent of the patients who died of their coronary disease were between 60 and 80 years of age. The youngest patient was 22 and the oldest 92 years of age. Women comprised 31 per cent, a somewhat higher incidence than in most series. Table 2 shows the arteries involved in group A, i. e., patients who died in the acute phase of the disease. Massive anterior infarction was observed in the 7 cases in which the left main coronary artery was thrombosed. Of interest is the fact that 23 patients had had recent thrombosis of two coronary arteries, and 2 showed all three major arteries thrombosed; 264 patients showed

Table 2.—*Recent Thrombosis and/or Infarction; Arteries Involved*

Artery	No. of Cases
Left main..	7
Left descending..	121
Left circumflex..	42
Right..	79
Two coronary..	23
Three coronary..	2
No recent thrombus..	41
Total..	315

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6. Wartman, W. B., and Hellerstein, H. K.: The Incidence of Heart Disease in 2,000 Consecutive Autopsies, Ann. Int. Med. **28**: 41-66 (Jan.) 1948.

7. Schlesinger, M. J.: Injection Plus Dissection Study of Coronary Artery Occlusions and Anastomoses, Am. Heart J. **15**: 528-568 (May) 1938.

8. Salans, A. H., and Tweed, P.: A Preliminary Study of the Coronary Circulation Post Mortem, Am. Heart J. **33**: 447-489 (April) 1947.

9. Ravin, A., and Geever, E. F.: Coronary Arteriosclerosis, Coronary Anastomoses and Myocardial Infarction: A Clinicopathological Study Based on an Injection Method, Arch. Int. Med. **78**: 125-139 (Aug.) 1946.

recent infarction. Evidence of old disease was manifested in the 315 patients in this group, since 143 showed evidence of old fibrosed infarcts and 117 showed organized thrombi in one or more coronary arteries. Ten of these showed cardiac aneurysm formation, and in 2 of these calcification was seen. One patient showed organized thrombi in all three major arteries and recent fatal thrombus in the left circumflex coronary artery. In 22 cases 2 major arteries showed organized thrombi. In this group thirty-two ruptures with cardiac tamponade were present, an incidence of 12.5 per cent in the cases with recent infarcts. In 2 cases there was rupture of the posterior papillary muscle and in 1 rupture of the interventricular septum.

In group B, which includes 107 cases in which there were old infarcts without recent thrombosis or infarction, in 56 there was an organized thrombus in only one coronary artery, in 20 in two major arteries and in 4 in all three major trunks. In this group cardiac aneurysms were observed in 10 cases, in 4 of which there was calcification in the scar.

The location of mural thrombi is given in table 3. As is to be expected, the vast majority were located in the left ventricle. A few of these were large enough to fill fully a third or a half of the ventricular cavity. Most of those in the right ventricle overlay areas of infarction of the muscle, chiefly in right coronary thrombosis.

Table 3.—*Mural Thrombi; Location*

Group	Left Ventricle	Left Auricle	Right Ventricle	Left Auricle	Hearts Involved	Total Cases	Percentage with Thrombi
A..............	124	13	18	15	138	315	44
B..............	36	4	3	14	42	107	39

LOCALIZATION OF EMBOLIC LESIONS

Table 4 shows the number and location of embolic lesions in groups A and B. In group C there were only 2 cases, 1 with a small infarct in the kidney and lung and the other with a small kidney infarct. In one third of the cases in group A and 36.4 per cent of group B there were one or more embolic localizations. In a total of 106 cases there were emboli in one hundred and sixty-one localizations.

Under the classification of "pulmonary major" are included those cases in which there was obvious embarrassment of pulmonary circulation either by a long large commonly coiled embolus in one or more major arteries (27 cases) or multiple smaller emboli in many branches of several lobes, with or without infarct formation (10 cases). If both lungs were involved, the case is credited only as 1 in the tabulation. None of the emboli occluding the main pulmonary trunks were of cardiac origin, but the emboli in 3 of the cases with multiple small occlusions were possibly derived from right auricular or ventricular thrombi. Demonstration of origin from iliac or femoral veins was possible in only 5 cases, since we were unable, because of autopsy restrictions, to dissect the veins below the thighs.

A total of 6 cases showed embolism of a main renal artery which may well have hastened death. Likewise, in 1 case embolism of the splenic artery with diffuse early infarction of the spleen may have played a major role in the death of the patient.

In 1 patient a large embolus plugged the bifurcation of the aorta and propagation thrombus extended to the level of the renal arteries. Gangrene had occurred up past the waist line. In another patient the right branch of the hepatic artery was occluded and early infarction of part of the right lobe of the liver was present.

It is difficult to evaluate the cerebral lesions, since most of the cases showed pronounced cerebral arteriosclerosis. The condition in 4 cases was probably thrombotic rather than embolic. In these no mural endocardial thrombus was found. All of the mesenteric and iliofemoral arterial occlusions were embolic, and a possible source from a thrombus in the left side of the heart was demonstrated. One man with femoral embolism and gangrene died of tetanus, the portal of entry being the necrotic great toe.

Table 4.—*Localisation of Embolic Lesions in Cases With and Without Intracardiac Thrombi*

Location	Group A With Thrombi	Group A Without Thrombi	Group A Total	Group B With Thrombi	Group B Without Thrombi	Group B Total
Pulmonary, major.	18	7	25	12	0	12
Pulmonary, minor.	15	8	23	7	6	13
Brain..............	4	3	7	5	2	7
Mesenteric.........	4	0	4	1	1	2
Extremity..........	6	1	7	4	1	5
Kidney, major......	3	0	3	2	1	3
Kidney, minor......	7	4	11	6	3	9
Spleen..............	7	4	11	4	3	7
Aorta...............	1	0	1	0	0	0
Hepatic artery.....	1	0	1	0	0	0
Total lesions.......	66	27	93	41	17	58
Total cases involved	46	21	67	26	13	39
Total cases in series	138	177	315	142	65	107

In some cases in which there were small or medium-sized infarcts of the kidney or spleen, no mural endocardial thrombus could be found. However, it is conceivable that a small thrombus may dislodge and leave no trace in the endocardial surface from which it separates.

The incidence of thromboses in the systemic veins which we were able to investigate was not very high. Had complete dissection of the upper and lower extremities been possible in light of the work of others, especially Hunter,[10] the incidence would probably have been much higher. Table 5 shows that periprostatic venous thrombi are the most commonly found. More iliofemoral thromboses were observed in the patients of group B, who had suffered longer from their infarction.

Table 5.—*Systemic Venous Thrombosis*

Veins Involved	Group A	Group B
Periprostatic..............................	15	12
Other pelvic..............................	6	3
Iliofemoral..............................	5	8
Splenic..............................	0	1
Mesenteric..............................	0	2
Renal..............................	0	1
Vena cava..............................	1	1
Total cases in series....................	315	107

SUMMARY AND CONCLUSION

The incidence of coronary heart disease observed in a small private hospital is reviewed. In fully 20 per cent of the cases in which autopsy was done in a seventeen year period, there was advanced disease of

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10. Hunter, W. C.; Sneedon, V. D.; Robertson, T. D., and Snyder, G. A.: Thrombosis of the Deep Veins of the Leg, Arch. Int. Med. 68: 1-17 (July) 1941.

the coronary arteries, and 14.4 per cent of the patients died primarily with heart failure as a result.

Mural endocardial thrombi were present in 180 out of 422 cases in which there was old or recent cardiac infarction and in which death occurred primarily of coronary heart disease. Embolic lesions were observed in 25 per cent of cases of the same group. Pulmonary embolism leads the list by far. Measures such as anticoagulant therapy and passive or active motion should be directed toward this serious complication.

EPILEPSY IN CHILDHOOD

Newer Methods of Diagnosis and Treatment

M. G. PETERMAN, M.D.
Milwaukee

Recent publicity to the laity by well meaning persons concerning the advances in the diagnosis and treatment of epilepsy has evoked some unfortunate reactions. Parents in desperate search of the "miracle treatment" have been given false hopes and dissatisfaction with usually adequate treatment or the best treatment available. The family physician who treats most of the cases of epilepsy and usually sees them first has properly resented the challenge to his familiarity with the recent developments in the study of the disease. Advertisements of "83 per cent improvement" in epilepsy and of "the hopeful disorder" offer false encouragement and lead to cruel disillusionment even though they quote learned authorities. For these reasons I have considered it timely to restate known facts concerning the cause of epilepsy and to review the advances in diagnosis and treatment with the newer drugs.

Our first duty to our patients and to the public is an honest statement of fact and a frank presentation of the prognosis. If "epilepsy can be licked" we are not yet ready for the knockout blow. Spontaneous regression of petit mal epilepsy in children is rare in my experience, and anticipation of this solution does not justify postponement of adequate treatment. The petit mal of childhood tends to become grand mal later in life.[1]

Epilepsy, like diabetes, is a chronic inherited disease which is present even before the child is born. Except when some unknown metabolic disorder supervenes the clinical manifestations may never develop, but the defective gene will be transmitted regardless.[2]

While we search for new anticonvulsants we must recognize the fact that our only hope for the elimination of epilepsy and the other inherited diseases lies in eugenics.

CAUSE

Since it has recently been stated that no progress was made in the medical treatment of epilepsy from 1912 to 1937,[3] it seems appropriate to review some of the literature which has apparently been overlooked.

The first progress in the study of the convulsive disorders began with a classification of the causes of convulsions in children.[4] This made possible the diagnosis of epilepsy by exclusion.[5] The next advance was made in the study of the metabolic changes which precipitate convulsions in the potentially epileptic child and the dietary adjustments which prevent convulsions. The beneficial effects of fasting and purging have been known since antiquity,[6] but their mechanism has never been satisfactorily established.[7] The favorable effects of dietary ketosis have been well studied and effectively demonstrated but not explained.[8] Ketosis or acidosis produced by drugs is not effective. Recent studies indicate that glycerol may reenforce the ketogenic diet.

The increased incidence of epilepsy is due to better and earlier recognition of convulsive disorders resulting from an increased interest in the subject. Another factor may well be the increased use of refined and processed foods. Last year it was demonstrated that the feeding of wheat gluten or "agenized" flour, bleached with nitrogen trichloride, produced clinical epilepsy in monkeys, dogs and cats even to the reproduction of the typical electroencephalographic patterns.[10] Fortunately this condition has not been reproduced in man. Undoubtedly there are other factors or substances removed or added in the processing of natural foods which may insidiously precipitate or activate convulsions, especially in those persons with inherited potential cerebral defects. It is interesting to note Elvehjem's deductions on the biochemistry of foods.[11] The ketogenic diet practically prohibits the use of white flour.[12]

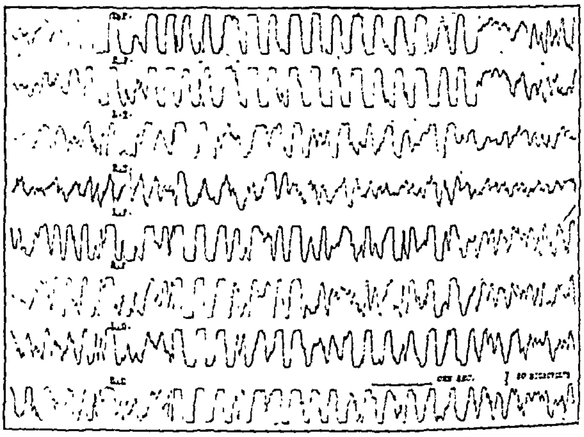

Fig. 1.—J. M., boy aged 8½, with petit mal.

DIAGNOSIS

The third and the greatest advance in the study of epilepsy was made by Hans Berger in 1929, when he introduced the electroencephalograph.[13] Berger established for the first time the fact that convulsive disorders have definite and distinctive brain wave pat-

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Read before the Section on Pediatrics at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

[1] Peterman, M. G.: Convulsions in Childhood: Twenty Year Study of 2,500 Cases, Am. J. Dis. Child. **72:** 399 (Oct.) 1946.

[2] Peterman, M. G.: Epilepsy in Childhood, Am. J. Dis. Child. **32:** 416 (Sept.) 1926.

[3] Merritt, H. H., and Brenner, C.: Bull. New York Acad. Med. **23:** 292 (May) 1947.

[4] Peterman, M. G.: Convulsions in Childhood: Study of Four Hundred and Nineteen Cases, J. A. M. A. **99:** 546 (Aug. 13) 1932.

[5] Peterman, M. G.: Convulsions in Childhood, J. A. M. A. **102:** 1729 (May 26) 1934.

[6] Peterman, M. G.: Ketogenic Diet in Treatment of Epilepsy, Am. J Dis. Child. **28:** 28 (July) 1924.

[7] Peterman, M. G.: Minnesota Med. **7:** 708 (Nov.) 1924.

[8] Peterman, M. G.: M. Clin. North America **8:** 1351 (Jan.) 1925.

[9] Peterman, M. G.: J. Diet. Admin. & Therapy **4:** 23 (Jan.) 1926

[10] Silver, M. L.; Johnson, R. E.; Kark, R. M.; Klein, J. R., and Monahan, E. P.: White Bread and Epilepsy in Animals, J. A. M. A. **135:** 757 (Nov. 22) 1947. Newell, G. W.; Erickson, T. C.; Gilson, W. E.; Gershoff, B. A., and Elvehjem, C. A.: Role of "Agenized" Flour in the Production of Running Fits, ibid. **135:** 760 (Nov. 22) 1947. Boudreau, F. G.: Nitrogen Trichloride Treated ("Agenized") Flour, personal communication to Dr. Paul B. Dunbar, Commissioner of Foods and Drugs, ibid. **135:** 769 (Nov. 22) 1947. Erickson, T. C., and others: A. Research Nerv. & Ment. Dis., Proc. **26:** 164, 1947.

[11] Elvehjem, C. A.: Recent Progress in Nutrition and Its Relation to Drug Therapy, J. A. M. A. **135:** 915 (April 3) 1948.

[12] Peterman, M. G.: Am. J. Nursing **26:** 267 (April 26) 1926.

[13] Berger, H.: Arch. f. Psychiat. **87:** 527, 1929; **94:** 16, 1931; **97:** 6, 1932; **98:** 231, 1932; **99:** 555, 1933; **100:** 301, 1933; **101:** 452, 1933; **102:** 538, 1934; **103:** 444, 1935; **104:** 678, 1936.

terns. This establishes that the disease has an organic basis. Berger demonstrated various types of cerebral dysrhythmia. With this remarkable apparatus it has thus been possible to establish the hereditary transmission of this disease through tracings on parents and relatives (figs. 1, 2, 3, 4, 5, 6 and 7). The electrogram is also of great value in localizing superficial brain tumors and encephalitis. Most of the progress in electroencephalography has been made by the Gibbses. These indefatigable pioneers in this new field have provided us with our present knowledge of the subject.[14] Their identification of the various manifestations of epilepsy give us a basis for more specific treatment. The electrogram also provides the only objective evidence for a true evaluation of treatment[15] (figs. 8 and 9).

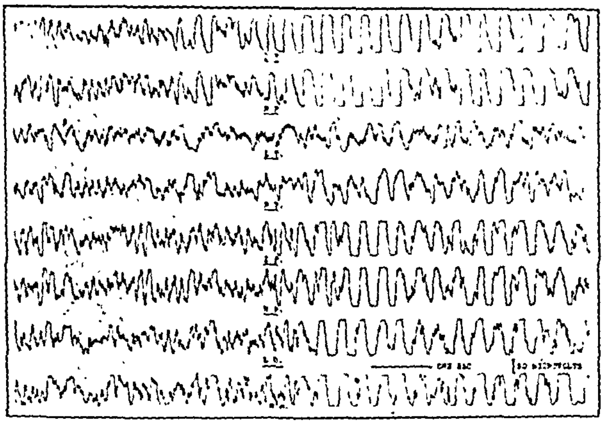

Fig. 2.—E. M., sister of J. M.; aged 13 years; abnormal record with slow waves.

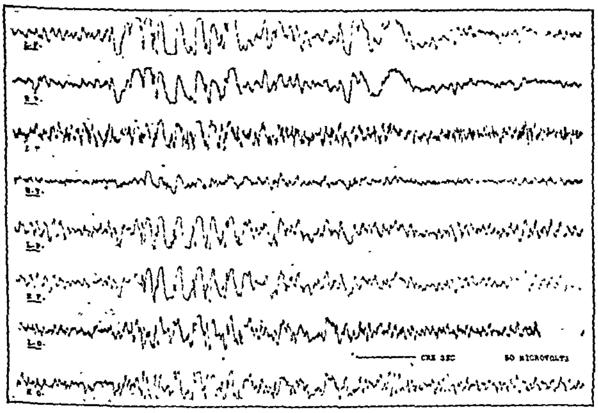

Fig. 3.—Mother of J. M., aged 42 years; undiagnosed epilepsy; admits convulsions.

The drug treatment of convulsive disorders is purely symptomatic. Whether the patient who is clinically free of seizures under drug therapy still has his potential disease can be determined only with an electrogram. This is the only basis available at present for making the crucial decision for the termination of treatment (figs. 10, 11 and 12). With the drugs available today it is extremely important to determine whether the clinical petit mal seizure is only that or whether it is akinetic epilepsy and also whether there is a grand mal or other component in the background. It is just as important to determine whether there is a cerebral focus and whether there are psychomotor seizures. Phenobarbital will control most grand mal convulsions but it has no effect on petit mal or psychomotor epilepsy.[16] Trimethadione ("tridione") will control about one third of the petit mal seizures, but it will precipitate the most severe grand mal seizures in the patient who has this type of epilepsy.[15] It has no effect on psychomotor seizures.[16]

Gibbs and Fuster have recently reported a study of 500 cases of clinical epilepsy. Seizure discharges were obtained on sleep electrograms in 82 per cent of their cases. Psychomotor epileptics showed seizure discharges in 95 per cent of the sleep tracings.[16] Sleep also tends to produce grand mal components in epileptics who have only petit mal patterns when awake. The value of a positive electrogram is unequivocal.

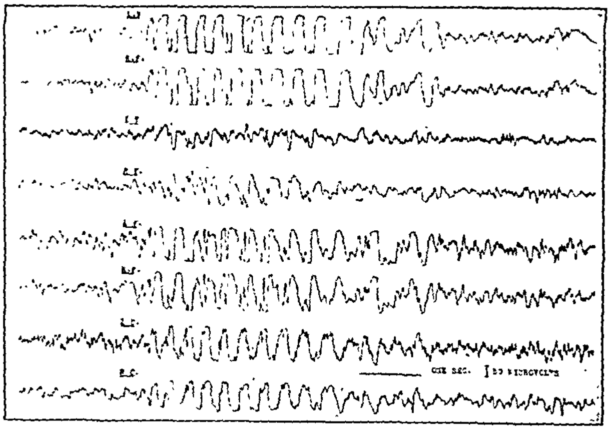

Fig. 4.—S. T., aged 13 years; spike wave components and a slow record; idiopathic epilepsy.

I should like here to reaffirm my earlier conclusion that the most reliable and positive means for making a diagnosis of epilepsy is an adequate and complete history together with a description of the seizure.[1] However, such a diagnosis is presumptive and is made on subjective evidence. Most parents choose to challenge and even reject the first diagnosis of epilepsy. They are entitled then to confirmation of the diagnosis by the objective evidence of the electrogram before accepting so serious a diagnosis and before undertaking

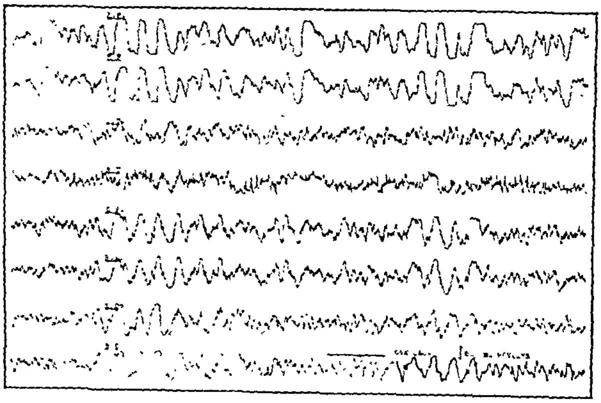

Fig. 5.—Mother of S. T.; has "spells," not diagnosed; abnormal record.

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[14] Gibbs, F. A., and Gibbs, E. L.: J. Pediat. 15: 749 (Dec.) 1939; Atlas of Electrocardiography, Cambridge, Mass., Lew A. Cummings, 1941. Gibbs, F. A.; Gibbs, E. L., and Lennox, W. G.: Electroencephalographic Classification of Epileptic Patients and Control Subject, Arch. Neurol. & Psychiat. 50: 111 (Aug.) 1943.

[15] Peterman, M. G.: Read at the meeting of the American Academy of Pediatrics, Pittsburgh, February 1947, to be published. Lennox, W. G., A. Research Nerv. & Ment. Dis., Proc. 26: 158, 1947.

[16] Gibbs, E. L., and Fuster, B.: To be published.

a prolonged or indefinitely long treatment. However, it would be medieval medicine to wait for recurring convulsions before making a diagnosis of epilepsy or to dismiss one convulsion as unimportant.

Most parents attribute the convulsions to head injuries, emotional disturbances or fainting spells. A careful history will often reveal that the injury itself was due to a seizure which had not been previously recognized (fig. 13). So-called fainting spells must be carefully investigated. It is essential that an electrogram be obtained before a diagnosis is made. Rook did two hundred and ninety-nine electrograms on patients with syncope and found that a large number pointed to epilepsy.[17]

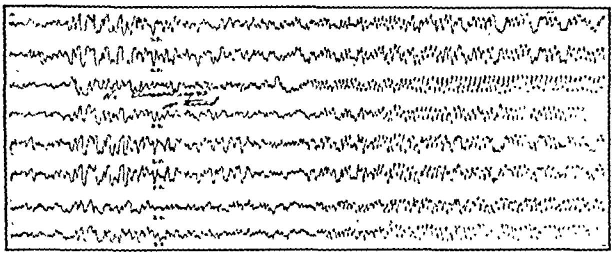

Fig. 6.—E. H., aged 13 years; idiopathic epilepsy; clinical seizures.

The serious behavior problems in children, particularly those which recur regularly with no apparent cause, demand a careful study. The basis for some of these disorders is psychomotor epilepsy or attacks of psychic equivalents of epilepsy.[18] Such a diagnosis may not be suspected until an electrogram reveals the characteristic pattern (figs. 14 and 15). While the typical psychomotor pattern of the electrogram is not often found before six years of age, these children with behavior problems often give a history of problem parents or relatives who show abnormal electrograms.[19] The children also show abnormal patterns before typical psychomotor patterns develop (figs. 16 and 17).

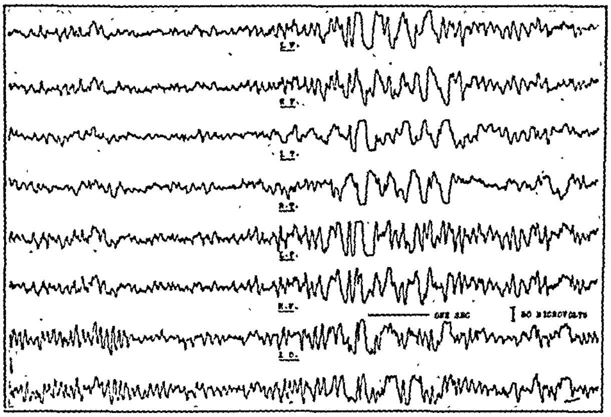

Fig. 7.—The grandmother of E. H., "had epilepsy."

INFANTILE CONVULSIONS

Less than 2 per cent of children admitted to the Milwaukee Children's Hospital for the usual children's diseases have convulsions.[20] Obviously, then, the child who has a convulsion whenever his body temperature reaches a certain level must have a basic potential convulsive disorder. I have made a study of 55 children in private practice who had so-called fever convulsions on first examination. Since 1941 it has been possible to obtain electrograms on 34 of these children in my office. Only five of these tracings could be considered normal. Whenever possible repeat electrograms were made on those patients with normal records. Thirty-five of these patients have been subsequently given a diagnosis of epilepsy. This establishes my previous statement that every convulsion in a child who does not have encephalitis, meningitis or poisoning must be considered seriously as the possible forerunner of a chronic convulsive disorder.[21] This finding agrees with the conclusions (figs. 18, 19 and 20), of M. Lennox.[22] Certainly every such case warrants an electrogram.

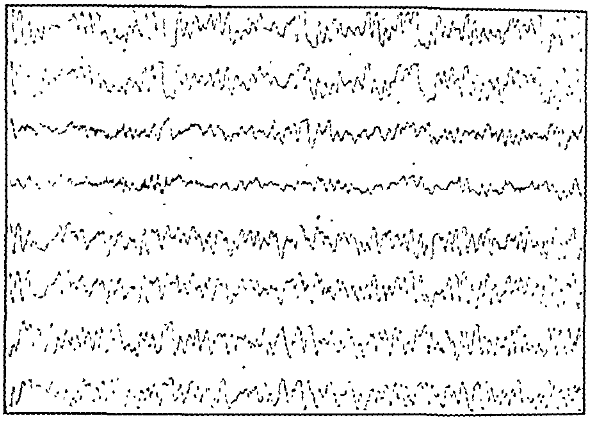

Fig. 8.—J. M. after three months' treatment on the ketogenic diet; record much improved.

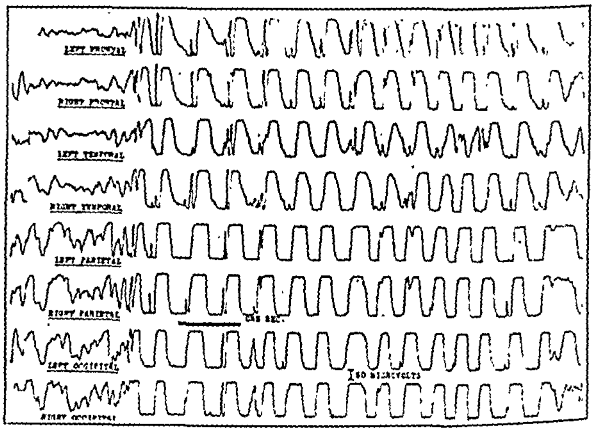

Fig. 9.—C. F., aged 7 years; petit mal.

Twenty per cent of my private epileptic patients gave a history of early convulsions. Osler stated that 40 per cent of epileptic persons gave a history of infantile convulsions.[23] Still reported that in 28 per cent of those with a history of infantile convulsions epilepsy developed.[24] Livingston and co-workers recently reported that 94 of 800 children in the epilepsy clinic at Johns Hopkins Hospital had "febrile convulsions."[25]

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[17] Rook, A. F.: Quart. J. Med. **16**: 181 (July) 1947.

[18] Rockwell, F. V.: A. Research Nerv. & Ment. Dis., Proc. **26**: 573, 1947.

[19] Peterman, M. G.: Nervous Child **6**: 1 (Jan.) 1947.

[20] Peterman, M. G.: Illinois M. J. **84**: 306 (Nov.) 1943.

[21] Peterman, M. G.: Am. J. Psychiat. **92**: 1433 (May) 1936.

[22] Lennox, M.: A. Research Nerv. & Ment. Dis., Proc. **26**: 342, 1947.

[23] Osler, W.: The Principles and Practice of Medicine, edited by T. McCrae, ed. 12, New York, D. Appleton-Century Company, Inc., 1935.

[24] Still, G. F.: Common Disorders and Diseases of Childhood, London, H. Frowde, 1909.

[25] Livingston, W.; Bridge, M., and Kajdi, L.: J. Pediat. **31**: 509 (Nov.) 1947.

Of these, 49 per cent recovered. However, since "recovery" is based on clinical evidence or questionaires, the value of this information is questionable. No electroencephalographic studies are mentioned. Many of these patients may still be potential epileptics. Patrick and Levy reported that 20 per cent of their epileptic patients gave an early history of infantile convulsions.[26]

TREATMENT

The treatment of idiopathic epilepsy must be based on sound diagnosis, not only of the disease but also of the type. For this the electroencephalograph is an invaluable aid and may provide the only evidence of progress or control.

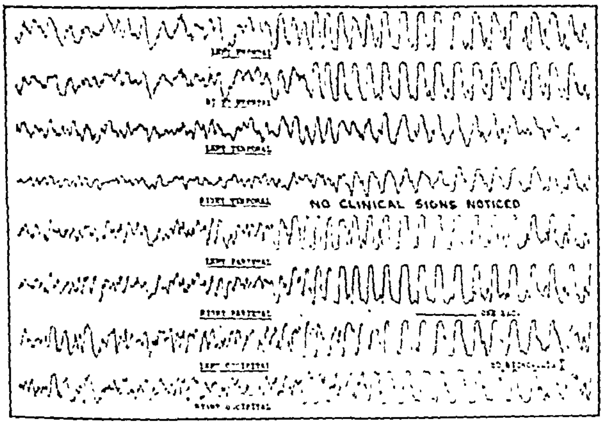

Fig. 10.—M. S., aged 26; idiopathic epilepsy, grand mal; "free of seizures" for six and one-half years; hyperventilation produced subclinical grand mal.

PETIT MAL

Petit mal epilepsy is a serious disease which produces a typical electroencephalographic pattern.[27] In my private series about one third of the epileptic patients have petit mal and half of these also have grand mal components or potentials. In most of the others grand mal develops later.[28] Hence, it is essential to know which phase of the disease demands first consideration.[29] Since subclinical seizures continue during sleep or may even be more frequent during sleep, it is essential to provide therapy during sleep as well as while the patient is awake. Until the introduction of trimethadione[30] there was no drug which had a definite effect on petit mal.[31] The claims of cures of petit mal with diphenylhydantoin sodium ("dilantin")[32] (even up to 75 per cent)[33] were not substantiated.[34] Lennox's claim of priority in the use of caffeine[35] in petit mal is not valid. Treatment with caffeine was reported by Stargardter (1921)[36] and Karger (1924).[37] Penfield and Erickson (1941) reviewed the reports on caffeine.[38] The results have not been satisfactory.[39]

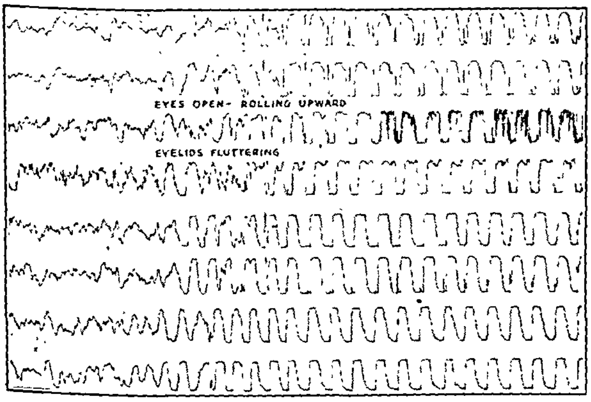

Fig. 11.—C. F., reported free but still has seizures.

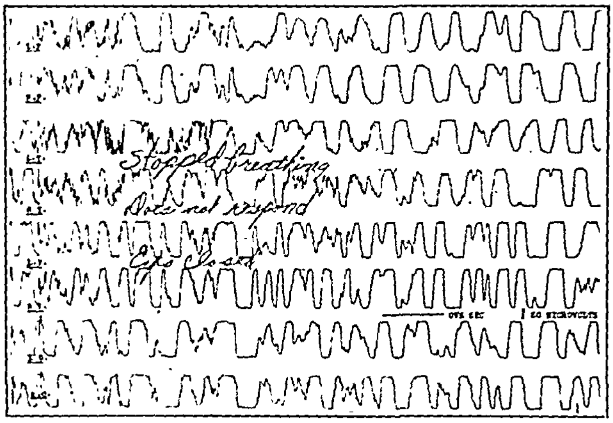

Fig. 12.—P. P., aged 16 years; mother says "free of seizures"; clinical seizure still on record.

Trimethadione will control about one third of the cases of uncomplicated petit mal,[40] but it will precipitate grand mal seizures in potential cases.[15] Trimethadione has also caused at least 4 deaths by depression of the bone marrow.[41]

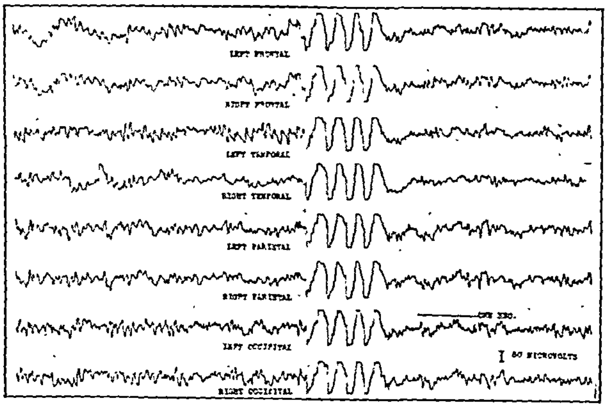

Fig. 13.—D. K. fell down steps and cannot recall why; she had dizzy spells, but no clinical seizures were recognized; 3 per second high voltage slow waves; diagnosis; idiopathic epilepsy.

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[26] Patrick, H. T., and Levy, D. M.: Early Convulsions in Epileptics and in Others, J. A. M. A. **82:** 375 (Feb. 2) 1924.

[27] Peterman, M. G.: Wisconsin M. J. **43:** 708 (July) 1944.

[28] Peterman, M. G.: Internat. Clin. **2:** 99 (June) 1935.

[29] Peterman, M. G.: Wisconsin M. J. **41:** 26 (Jan.) 1942.

[30] Thorne, F. C.: Psychiatric Quart. **20:** 1 (Nov.) 1945. Perlstein, M. A.: Tridione: II. Clinical Investigation, Arch. Neurol. & Psychiat. **55:** 164 (Feb.) 1946.

[31] Peterman, M. G.: J. Tennessee M. A. **34:** 1 (Jan.) 1941.

[32] Merritt, H. H.: Cincinnati J. Med. **27:** 279 (May) 1946. Lennox, W. G.: J. Pediat. **29:** 359 (Sept.) 1946.

[33] Helmholz, H. F.: J. Indiana M. A. **32:** 71 (Feb.) 1939.

[34] Peterman, M. G.: J. Kansas M. Soc. **41:** 277 (July) 1940.

[35] Lennox, W. G.: Petit Mal Epilepsies, J. A. M. A. **129:** 1069 (Dec. 15) 1945

[36] Stargardter, J.: Jahrb. f. Kinderh. **95:** 230, 1921.

[37] Karger, P.: Deutsche med. Wchnschr. **50:** 1531 (Nov. 7) 1924.

[38] Penfield, W., and Erickson, T. C.: Epilepsy and Cerebral Localization, Springfield, Ill., Charles C Thomas, Publisher, 1941.

[39] Peterman, M. G.: Epilepsy in Childhood, J. A. M. A. **88:** 1868 (June 11) 1927.

[40] Peterman, M. G., in Litchfield, H., and Dembo, L. H.: Therapeutics of Infancy and Childhood, Philadelphia, F. A. Davis Company, 1947.

[41] Mackay, R. P., and Gottstein, W. K.: Aplastic Anemia and Agranulocytosis Following Tridione, J. A. M. A. **132:** 13 (Sept. 7) 1946. Aplastic Anemia and Tridione, editorial, ibid. **132:** 26 (Sept. 7) 1946.

"Paradione" is a new drug[42] introduced in 1946.[43] It is 3, 5-dimethyl-5-ethyloxazolidine-2, 4-dione and differs from trimethadione only in the substitution of an ethyl for a methyl group on carbon 5. It is an oily liquid, slightly soluble in water but quite soluble in alcohol. It has been used to treat petit mal which has not responded to trimethadione. Because of its composition, "paradione" may also cause bone marrow depression in susceptible patients; therefore, blood counts must be made weekly when patients are given either drug. It is also advisable to supplement both drugs with phenobarbital.

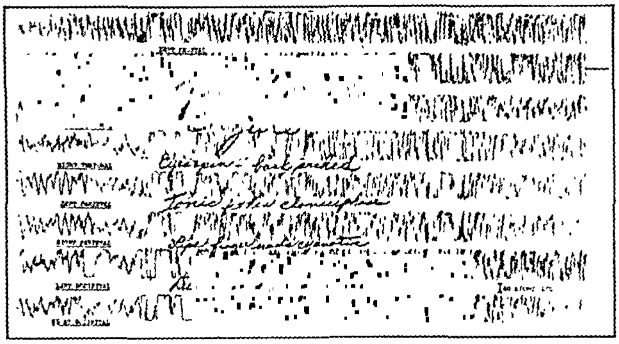

Fig. 14.—R. P., a behavior problem; grand mal seizure.

In February, 1947, I reported on a new drug, "thyphenytoin."[15] This drug,[44] sodium 5, 5-phenylthienylhydantoin, was first prepared in 1941. The anticonvulsant properties were demonstrated in cats by the electroshock method. The acute toxicity was found to be 226.6 plus or minus 5.78 mg. per kilogram of body weight. This drug is approximately one half as toxic as diphenylhydantoin sodium. No clinical manifestations of toxicity were noted and no tissue damage was demonstrated on microscopic study. There was no liver damage found. Preliminary observations were made on patients in 1942. The results were most effective in petit mal.[15]

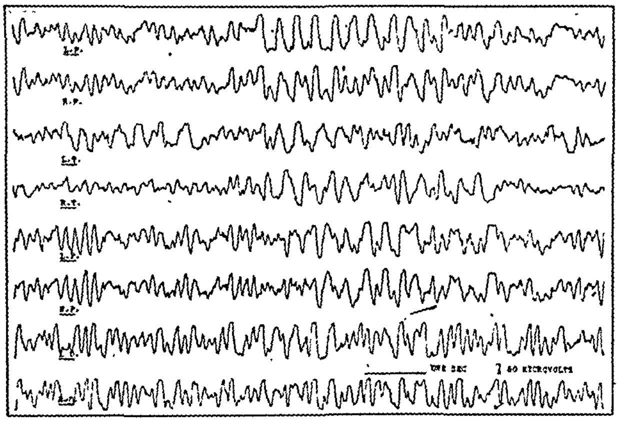

Fig. 15.—R. P., behavior problem; abnormal interval record on treatment.

Seventy-three children with convulsions have now been treated with this drug for two years. Most of these are private patients under close supervision. Of these, 30 had grand mal, 9 had petit mal and 8 had both. One patient had akinetic epilepsy (or nodding spasms), 3 had chronic encephalitis, 16 had cerebral birth injury residues and the others had various organic lesions.

The results of treatment with "thyphenytoin" in adequate dosage are as follows: of 30 patients with grand mal 20 have been improved, 8 unimproved and 2 had reactions to the drug. Of 9 patients with petit mal 7 have been improved and 2 unimproved. Two patients not improved on "thyphenytoin" have been free on trimethadione. One of these, already mentioned, contracted anemia and was again placed on "thyphenytoin." The seizures have now been under control for twelve months. In 8 cases of combined epilepsy 4 have been improved and 4 unimproved. Six cases of cerebral birth residual with convulsions were improved and 4 not improved. The results of treatment of seizures due to various organic lesions were not striking.

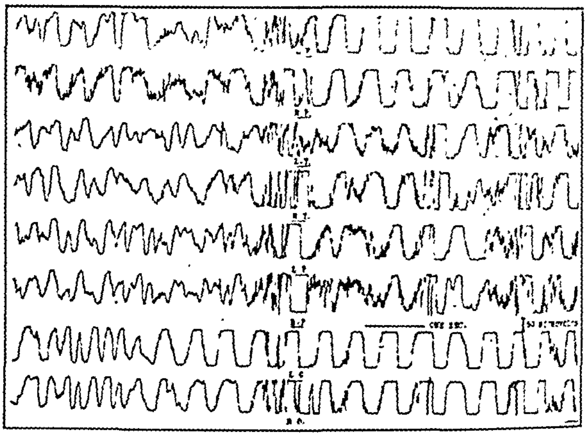

Fig. 16.—L. K., aged 6 years; behavior problem; episodes recurring frequently with normal intervals; abnormal record.

"Thyphenytoin" was given in a dosage of 0.13 Gm. two or three times a day. This dosage was increased when necessary to 0.39 Gm. three or four times a day. When the latter dosage did not control seizures the drug was supplemented in petit mal with trimethadione or in grand mal or combined epilepsy with phenobarbital. (If the capsule cannot be given by mouth, it may be punctured and inserted into the rectum.) Except for the 2 cases mentioned which responded to trimethadione after "thyphenytoin" failed to control petit mal seizures, the addition of trimethadione to "thyphenytoin" did not influence the results. Phenobarbital is an effective supplement to "thyphenytoin" in grand mal. Smaller doses of phenobarbital are required when "thyphenytoin" is used.

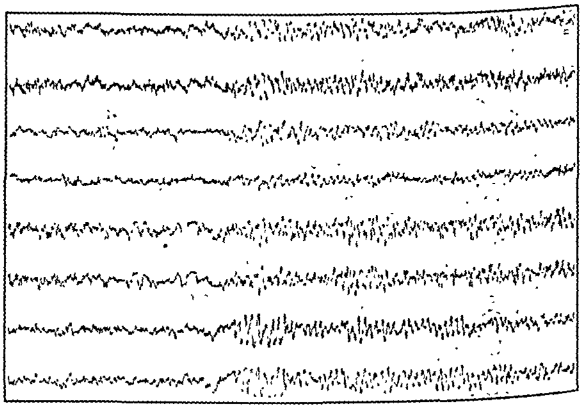

Fig. 17.—Mother of L. K., aged 23 years; a low voltage, fast record.

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[42] Furnished by Abbott Laboratories, North Chicago, Ill.

[43] Lennox, W. G.: A. Research Nerv. & Ment. Dis., Proc. 26: 425, 1947.

[44] Furnished by Eli Lilly & Company, Research Laboratories, Indianapolis.

The side reactions to "thyphenytoin" were as follows: In 2 patients hypertrophy of the gums developed; in 4 ataxia, disequilibrium and incoordination, and in 2 a drug rash. All reactions except the hypertrophy of the gums subsided promptly on withdrawal of the drug. The blood counts were not altered in any case.

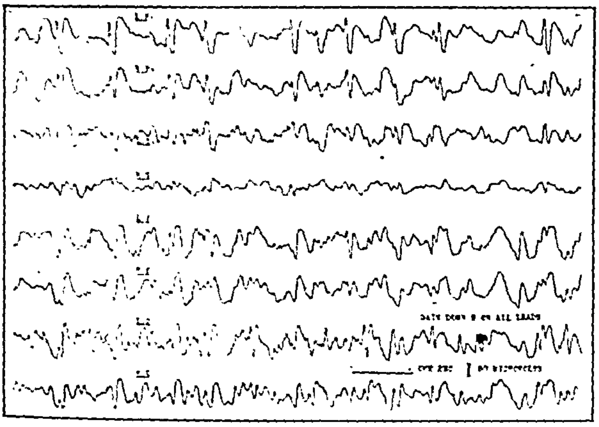

Fig. 18.—J. W., aged 6 years, with "febrile convulsions"—actually, internal hydrocephalus and multiple congenital anomalies; petit mal variant.

GRAND MAL

The exaggerated claims for the effectiveness of diphenylhydantoin sodium[45] have not been substantiated in children.[46] This drug is a useful addition to the list of anticonvulsants and occasionally it may control major seizures which have not responded to phenobarbital, but the incidence of undesirable side effects is far greater.[47] Irreversible hypertrophy of the gums, vertigo and disorientation are far more frequent and much more undesirable than are the occasional reactions of drowsiness encountered with large doses of phenobarbital. Phenobarbital remains the most effective and satisfactory drug available for the treatment of major convulsions. While the manufacturers of diphenylhydantoin sodium have recently stated that "no other modern anticonvulsant has received the universal acclaim comparable to that accorded 'dilantin'," they have introduced a new combination of phenobarbital with diphenylhydantoin sodium as a useful therapeutic agent for control of epilepsy. Beckman stated that reactions to diphenylhydantoin sodium have been reported as from 36 per cent to 100 per cent by various authors, and Ritchie and Kolb reported a death from its use.[47] Beckman also stated, "As a matter of fact, most men find that even in treatment of adults 'dilantin' is best employed in combination with phenobarbital."[47]

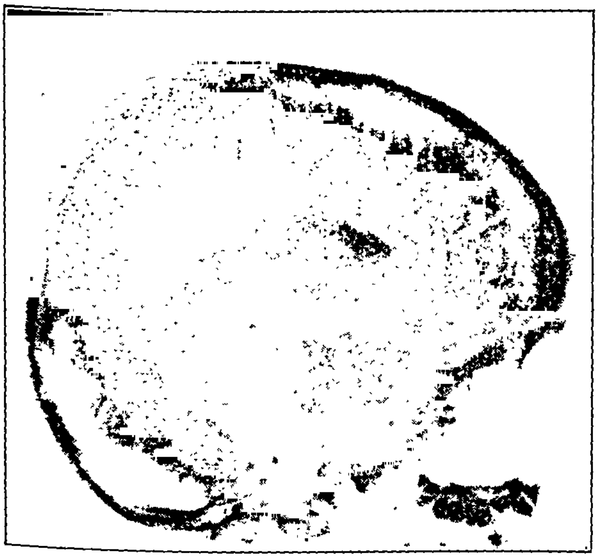

Fig. 19.—J. W., pneumogram shows unexpected internal hydrocephalus.

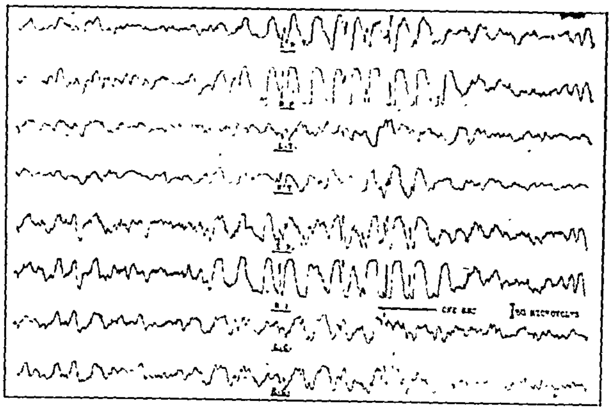

Fig. 20.—C. R., aged 12 years, with "febrile convulsions"; slow record with spikes; a brain hemorrhage residual.

Recognizing the superiority of barbiturates in the treatment of major convulsions, one of the major drug manufacturers has prepared a new barbiturate, "AN_{23}." This preparation is 5, 5-diethyl, 1-methylbarbituric acid.[47a] It is very slightly soluble in water and unstable in alkali. It has hypnotic properties similar to phenobarbital and may be tried when there is some indication to replace phenobarbital. The dosage is the same. Over 100 convulsive patients have been treated with this drug. Of these, 51 have been treated for one year. Of the epileptic patients, 14 with grand mal have been improved, 5 not improved and 2 had reactions which required change of drug. One with petit mal has been improved; 2 with combined petit and grand mal have been improved and 2 not improved. Two with myoclonic and 1 with akinetic epilepsy have been improved. Six with cerebral birth injury residues have been improved and 8 not improved. Four with

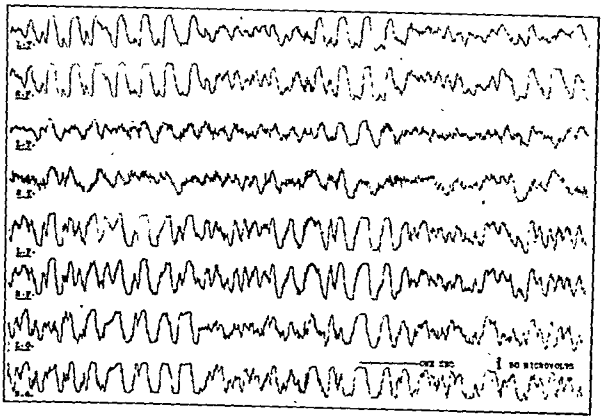

Fig. 21.—Abnormal slow record; 3 per second in father of epileptic boy.

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[45] Merritt, H. H., and Putnam, T. J.: Sodium Diphethyl Hydantoinate in Treatment of Convulsive Disorders, J. A. M. A. **111**: 1068 (Sept. 17) 1938. Merritt, H. H.: Wisconsin M. J. **47**: 463, 1948.

[46] Peterman, M. G.: South. M. J. **41**: 62 (Jan.) 1948.

[47] Beckman, H.: Treatment in General Practice, ed. 5, Philadelphia, W. B. Saunders Company, 1945.

[47a] Supplied by Abbott Laboratories, N. Chicago, Ill.

miscellaneous organic convulsive disorders have been improved and 3 not improved.

In common with other investigators in the field of convulsive disorders, I have welcomed and tried every new anticonvulsant recommended by reputable colleagues. Of course, the new drugs are first given the most critical tests in the most resistant cases. A new drug always offers new hopes, particularly for patients who have not had satisfactory relief. Any new anticonvulsant with a definite superiority does not require advertising to prove its advantages. Thus I have used diphenylhydantoin sodium ("dilantin") since its introduction in 1937 and methylphenylethyl hydantoin ("mesantoin") since 1945. The results have not been equal to those with phenobarbital.

I have over 400 epileptic children in my private practice now. Every patient is given an electrogram on first examination in my office. A negative record is always repeated as often as necessary or possible until the diagnosis is confirmed. Repeat electrograms are made as often as possible to check the progress of treatment. Older patients free of seizures are recalled whenever possible to check their status (fig. 19). Some of the unusual findings are presented in the figures.

Of the patients treated over one year 123 are on the ketogenic diet. Forty-five with grand mal are improved; 10 not improved. Twenty-seven with petit mal are improved and 6 not improved. Twenty-seven with combined grand and petit mal are improved and 8 not improved.

Eighty-two patients are on phenobarbital. Fifty with grand mal are improved; 9 not improved. Two with petit mal are improved and 4 not improved. Thirteen with combined epilepsy are improved and 4 not improved.

Twenty-five patients refractory to other treatment are on diphenylhydantoin sodium. Four with grand mal are improved; 3 not improved. Three with petit mal are improved and 2 not improved. Of the patients with combined epilepsy 4 are improved and 9 not improved.

The type of treatment indicated must be determined for every individual case. It depends on the type of convulsions present and their probable cause. The diagnosis of idiopathic epilepsy must be qualified by the type of seizures manifested. My results of treatment are in essential agreement with those of Keith.[48]

SUMMARY

Every child with a convulsive disorder demands the most complete history and study possible. This should include determinations of blood sugar, calcium and phosphorus. Whenever possible one or several electrograms should be done to establish the diagnosis and determine the type of epilepsy. Sleep tracings are preferable.

The control of convulsions requires years or a lifetime use of anticonvulsant drugs.

The most effective treatment for all types of idiopathic epilepsy is the ketogenic diet. Fifty per cent of all epilepsies in children may be controlled with the diet. All treatment of epilepsy with drugs is symptomatic and should be considered only if the diet is impractical or impossible. Treatment with drugs at best is a temporization with a chronic hereditary disease.

If the ketogenic diet is impractical or impossible, the most effective treatment of petit mal seizures may be accomplished with "thyphenytoin," "paradione" or trimethadione. Only "thyphenytoin" will help control grand mal. Trimethadione and "paradione" require the supplementary use of phenobarbital to prevent major seizures.

The most effective and least expensive drug for the control of major seizures is phenobarbital. This drug is universally available and has the lowest incidence of undesirable side effects of any of the anticonvulsants. All anticonvulsants should be administered throughout the twenty-four hours.

At the present time our only hope for the elimination of epilepsy lies in the limitation of the progeny of epileptic parents.

411 East Madison Street (2).

ABSTRACT OF DISCUSSION

Dr. W. Ambrose McGee, Richmond, Va.: Whenever epilepsy is mentioned, the name Peterman stands out like Joslin in diabetes. He has been an advocate of the ketogenic diet and has achieved results with that part of his epileptic therapy. Like many difficult routines of therapy, that diet is hard to follow rigidly, and cooperation is difficult—hence the many adverse reports. The electroencephalograph offers much in the diagnosis and treatment of epilepsy. Not only does it establish a distinct brain wave pattern and puts the disease on an organic base, but it is a great help in revealing hereditary transmission. Recently Dees and Lowenbach showed the electroencephalogram to be abnormal in a high percentage of allergic children, regardless of whether the allergy is complicated by behavior problems or convulsive disorders. The irregular brain waves are predominately occipital in half of the cases of allergy studied. Such occipital dysrhythmia appears twice as often in those children with positive histories of allergy as in those with negative histories. The same percentage of occipital dysrhythmia occurred in children with allergy complicated by convulsions and behavior problems as in those with allergy only. Such was not true in normal nonallergic children's electroencephalograms, or in nonallergic children with convulsive disorders or behavior problems compared with the allergic group. Before the day of the electroencephalogram it was my privilege to see 3 children who had epileptiform convulsions and who were also allergic. On a restricted diet, based on history and positive reactions to intradermal tests, and in 2 instances by the simultaneous use of an antigen, the 3 children ceased having convulsions and personality problems; they have developed into healthy children over a period of eight to ten years.

Dr. Frederic A. Gibbs, Chicago: Dr. Peterman is pessimistic. I might agree with him that we are not ready for the "knock-out blow" against epilepsy, but the only way that we can find out is to try the new remedies on a large scale. No one can deny that phenobarbital, diphenylhydantoin sodium and methylphenylethyl hydantoin ("mesantoin") are powerful agents against grand mal, or that trimethadione and "paradione" are powerful against petit mal. Dr. Peterman has told you of his good results with trimethadione. What these will do to the total clinical problem of epilepsy will only appear when they come into general use. These drugs are no harder to use than many you are using every day. Epilepsy is too common a disorder to be treated entirely by subspecialists. You should refer only complicated and resistant cases. Arguments as to which antiepileptic drug is the best are meaningless; it is clear that one type of drug can relieve one type of seizure and make another worse; it is also clear that patients with apparently similar clinical and electroencephalographic disturbances can respond differently to different drugs. For the patients' sake we cannot discard any remedies of known value, and all should be tried before a case is abandoned. To deny that a new day has dawned for the epileptic is to forget the ignorance that so recently surrounded the problem and the brightness of the present illumination. It now seems unnecessary and even cruel to place major emphasis on hereditary factors. There are, of course, rare cases in which hereditary factors are paramount, but even in so-called idiopathic epilepsy the hereditary factor is in general no greater than in diabetes. Lennox's studies on identical twins have shown that what is usually inherited is not epilepsy, but a weakness which must be activated (if seizures are to develop) by some type of brain injury. An ever increasing army of persons will thank God and you, their doctors, for the advances that have been made against epilepsy. Each new drug adds new recruits. If Dr. Peterman wishes to be gloomy, that is his right. I only hope he will continue his contributions in spite of his pessimism.

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[48] Keith, H. M.: Results of Treatment of Recurring Convulsive Attacks of Epilepsy, Am. J. Dis. Child. **74:** 140 (Aug.) 1947.

PRESENT STATUS OF NARCOTIC ADDICTION

With Particular Reference to Medical Indications and Comparative Addiction Liability of the Newer and Older Analgesic Drugs

VICTOR H. VOGEL, M.D.
HARRIS ISBELL, M.D.
and
KENNETH W. CHAPMAN, M.D.
Lexington, Ky.

When the Harrison Narcotic Act was passed in 1914 there were perhaps 150,000 to 200,000 narcotic addicts, mostly women, in the United States.[1] Now, according to a recent estimate by Mr. H. J. Anslinger, Commissioner of Narcotics,[2] there is about 1 addict per 3,000 of population, or a total of approximately 48,000, mostly men. This reduction in addiction has been largely due to the vigorous enforcement of the Harrison Narcotic Act and to federal facilities for the treatment of addicts. Compared with the problems arising from the abuse of drugs such as the barbiturates and alcohol, narcotic addiction is not a great public health hazard. However, to the person and his family, narcotic addiction is a tragedy which often brings about complete ruin. Without the preventive influence of legal control and the treatment of identified addicts, narcotic addiction would spread somewhat like the infectious diseases which are public health problems.

If one listens to the inveterate narcotic addict, the question immediately arises as to why addiction should be controlled and discouraged, since the addict describes "God's medicine" as the agent which makes him at ease, contented, ambitious and of such improved efficiency that he can compete on normal terms with his fellowman. This effect is not seen in the majority of cases. After mentioning the exceptional persons who may adapt to life's difficulties better with narcotic drugs, Kolb said of morphine and morphine-like drugs[3]:

> . . . when taken in large doses, [they] sap the physical and mental energy; lethargy is produced, ambition is lessened, and the pleasurable feeling already described—that all is well—makes the addicts contented. These various effects cause them to pay less attention to work than formerly; consequently, they tend to become idlers by this means alone. Those who depend upon the illegitimate traffic are sometimes unable to work because of discomfort and weakness due to insufficient narcotics, and at other times they stay away from their work in order to look for the drug. There are cases . . . who have gone to distant cities regularly to get an ounce of heroin or morphine, and others who have lost as many as a dozen jobs through neglecting work to meet their peddlers, or through lying in bed in the morning instead of going to work because the dose that would have put energy into them was not available. Often, when these cases secure a supply, after their short periods of deprivation, they take more than is actually necessary to keep them comfortable. The result is that they alternate between physical and mental irritability and physical and mental lethargy. Both extremes make for emaciation, physical inefficiency, and unusual mental reactions.
>
> The dreamy satisfaction and the pleasurable physical thrill produced by opium in many addicts in their early experiences with it are of themselves forms of dissipation that tend to cause moral deterioration. Addicts, as a rule, are compelled to associate with persons of low moral character in order to continue their addiction. Financial embarrassment resulting from idleness or the high price of peddled narcotics impels them to beg money from their friends, obtain it from members of their families by subterfuge, or steal, in order to supply themselves with drugs; they suffer in manliness through feeling what they often consider the just contempt of the public; they suffer through their constant fear of arrest, or because of a term in the penitentiary served for having narcotics in their possession. This train of events brings about unfavorable character changes and gradual moral deterioration, and converts what might have been fairly useful citizens into outcasts, idlers, or dependents.

In spite of the fact that there is no consistent organic damage seen in the body following prolonged and excessive use of narcotic drugs, character deterioration is real and great, as evidenced by the deliberate policy of the Japanese in the late war to make addicts of large segments of the alien populations under their control.

DEFINITION OF DRUG ADDICTION

Drug addiction may be defined as a state in which a person has lost the power of self control with reference to a drug and abuses the drug to such an extent that the person or society is harmed. In the United States, only derivatives of opium (including morphine, heroin, dihydromorphinone hydrochloride ["dilaudid hydrochloride"], codeine and metopon), the morphine-like synthetic drugs (including meperidine hydrochloride ["demerol hydrochloride"], methadon [amidone, "dolophine," 10820] and isomethadon), cocaine and marihuana are under control of the Harrison Narcotic Act and similar acts. There are other drugs which, according to our definition, are addicting, including the barbiturates, bromides, alcohol, peyote (mescaline) and amphetamine, but none of these are subject to legal control. However, users of peyote are eligible for treatment at the federal hospitals for drug addicts.

Himmelsbach and Small[4] described addiction to opium and similar drugs as embracing three intimately related but distinct phenomena: (1) tolerance, (2) physical dependence and (3) habituation.

Tolerance is defined as a diminishing effect on repetition of the same dose of the drug or, conversely, a necessity to increase the dose to obtain an effect equivalent to the original dose when the drug is administered repeatedly over a period of time. Physical dependence refers to an altered physiologic state, brought about by the repeated administration of a drug over a long period of time, which necessitates the continued use of the drug to prevent the appearance of the characteristic illness which is termed an abstinence syndrome. Habituation refers to emotional or psychologic dependence on the drug—the substitution of the drug for other types of adaptive behavior. Habituation is closely related to a drug's euphoric effect, i. e., relief of pain or emotional discomfort.[3]

From the United States Public Health Service Hospital, Lexington, Ky.

Read in the General Scientific Meetings at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 22, 1948.

This article was edited previous to the date on which the Council on Pharmacy and Chemistry announced in The Journal the addition of a second "e" in the spelling of "methadone."

[1] Kolb, L.: Drug Addiction as a Public Health Problem, Scient. Monthly 48: 391 (May) 1939.

[2] Anslinger, H. J.: Testimony Given Bef[illegible] the Committee on Appropriations, House of [illegible] Congress, Second Session, Supplemental Federa[illegible] priation Bill for 1949, Printed for the Use of the Committee on Appropriations, Washington, D. C., Government Printing Office, 1948.

[3] Kolb, L.: Pleasure and Deterioration from Narcotic Addiction, Ment. Hyg. 9: 699 (Oct.) 1925.

[4] Himmelsbach, C. K., and Small, L. F.: Clinical Studies of Drug Addiction: II. "Rossium" Treatment of Drug Addiction; with a Report on the Chemistry of "Rossium," Supplement 125 to the Public Health Reports, United States Treasury Department, Public Health Service, 1937, p. 1.

The comparative importance of these three qualities in the total picture of addiction is still a matter of dispute. The role of tolerance in addiction is obscure and difficult to evaluate. Tolerance, however, has been shown to develop to all morphine-like drugs. It is empirically included as one of the qualities of the addicting drug. Physical dependence has been regarded by many persons, particularly by pharmacologists, as the primary and only distinguishing characteristic of an addicting drug. Other persons, particularly psychiatrists, regard emotional dependence or habituation as the all-important factor in addiction. Some have gone so far as to claim that withdrawal symptoms are psychic and not of physiologic origin. A view intermediate between these two extremes is probably correct. Both physical and emotional dependence are important in addiction to morphine. Wikler [5] has shown that physical dependence on morphine and methadon develops in the isolated segments of the spinal cord in chronic spinal dogs, and also that physical dependence occurs in chronic decorticated dogs. Wikler's observation proves beyond doubt that physical dependence is a real physiologic entity and is not psychic in origin. On the other hand, physical dependence does not explain why addicts begin the use of drugs, continually increase the dose and number of doses until they are dependent. Nor does physical dependence explain why so many addicts repeatedly relapse to the use of drugs long after the withdrawal illness has subsided. Some addicts begin to use drugs for the alleviation of pain caused by organic lesions; others take up the habit to relieve emotional tension; all continue to use the drug because they enjoy the sensation it produces when taken in amounts beyond that necessary to alleviate or to prevent the appearance of the withdrawal illness.

Barbiturates fulfil all three criteria of addiction: tolerance is developed; habituation is developed; physical dependence, although not seen as consistently as with morphine, has been repeatedly observed among our patients who have used barbiturates alone or with morphine. If barbiturates are withdrawn abruptly from patients who have been taking 12 grains (0.78 Gm.) or more daily for several weeks, convulsions may develop in three to four days and acute psychotic reactions may be seen after seven to ten days. Both of these conditions can be avoided by gradual reduction of the daily dose of barbiturates over a period of three weeks.

Bromide addicts show habituation but not physical dependence, as demonstrated by the fact that withdrawal is best accomplished abruptly and by elimination procedures. Tolerance to bromides is doubtful.

Amphetamine fulfils the most important qualification, that of habituation, but neither physical dependence nor tolerance develops. The best treatment is abrupt withdrawal of the drug.

Cocaine produces habituation but does not induce physical dependence or tolerance. Cocaine, when taken intravenously, produces an orgastic sensation, and addicts repeat their doses at very short intervals in order to experience this feeling of ecstasy as often as possible. As the dose is repeated, the toxic effects of cocaine accumulate and the users have hallucinations and paranoid delusions, which may be dangerous. The toxic effects of cocaine are so unpleasant that there are few pure cocaine addicts in the United States. Ordinarily the drug is used in conjunction with some physiologic antidote, particularly morphine.

Marihuana causes a mild form of intoxication which is popular among maladjusted adolescents and others, including musicians. Neither tolerance nor physical dependence develops with this drug.[6] The greatest danger of smoking marihuana appears to be possible precipitation of disturbed behavior in persons with incipient psychoses.[6c]

With alcohol, tolerance and habituation definitely develop. It is possible that delirium tremens, alcoholic "epilepsy" and other phenomena sometimes attributed to toxic effects of alcohol represent abstinence syndromes based on physical dependence on this drug.

ETIOLOGIC ASPECTS

Drug addiction should be regarded as a symptom of a basic underlying personality maladjustment. These personality disorders run the gamut of the standard psychiatric nomenclature from the simple anxiety states to the major psychoses. A vast majority of narcotic drug addict patients are fundamentally emotionally immature childlike persons, who have never made a proper adaptation to the problems of living. Many of our patients are former alcoholic addicts who found that narcotic drugs relieved their inner emotional tension as effectively as alcohol but, at the same time, did not produce obvious signs of intoxication. After changing from alcohol to narcotic drugs, alcoholic addicts may be able, for a period of time, to deceive themselves and their associates into believing that they are making a satisfactory adjustment.

The kinds of personality disorders which underlie drug addiction have been well described by Kolb[7] and by Felix,[8] who lists four general personality types.

The first group is made up of normal persons accidentally addicted. It consists of patients who in the course of an illness have received drugs over an extended period of time and, following relief of their ailments, have continued the use of drugs. These persons are frequently termed "accidental" or "medical" addicts. Such persons are regarded by some authors as constituting a special group of addicts who are different from those persons who began the use of drugs as a result of association with persons who were already addicted. In our experience, all "medical" addicts have some fundamental emotional problem which causes them to continue the use of drugs beyond the period of medical need. There is, then, no basic difference between "medical" and "nonmedical" addicts except in the mode of the original contact with drugs. In persons with stable personalities, social pressure, conscience and a well balanced emotional makeup negate the pleasure produced by drugs sufficiently to prevent their continued use.

The second group consists of persons with all kinds of psychoneurotic disorders who, as Felix [8a] said, take drugs to relieve whatever symptoms they may have. The manifestation of the neurosis may be anxiety, an obsession or compulsion or any of the great group of psychosomatic disorders.

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[5] Wikler, A.: Hindlimb Reflexes in Chronic Spinal Dogs During a Cycle of Morphine Addiction, Federation Proc. **4:** 141 (March) 1945. Wikler, A., and Frank, K.: Tolerance and Physical Dependence in Intact and Chronic Spinal Dogs During Addiction to 10820 (4-4-diphenyl-6-dimethylamino-3-heptanone), ibid. **6:** 384 (March) 1947. Wikler, A.: Reactions of Chronic Decorticated Dogs During a Cycle of Addiction to Methadon, *ibid.* **7:** 265 (March) 1948.

[6] (*a*) Wallace, G. B.: The Marihuana Problem in the City of New York: Sociological, Medical, Psychological and Pharmacological Studies, Lancaster, Pa., Jacques Cattell Press, 1945. (*b*) Reichard, J. D.: Some Myths About Marihuana, Federal Probation, **10:** 15 (Dec.) 1946. (*c*) Williams, E. G.; [illegible] C. K.; Wikler, A.; Ruble, D. C., and Lloyd, B. J.: [illegible] and Pyrahexyl Compound, Pub. Health Rep. **61:** [illegible]

[7] Kolb, L.: [illegible] of Drug Addicts, Ment. Hyg. **9:** 300 (April) 1925.

[8] (*a*) Felix, R. H.: Some Comments on the Psychopathology of Drug Addiction, Ment. Hyg. **23:** 567 (Oct.) 1939; (*b*) An Appraisal of the Personality Types of the Addict, Am. J. Psychiat. **100:** 462 (Jan.) 1944.

The third and largest group consists of psychopathic persons, who ordinarily become addicted through contact and association with persons already addicted. They are generally emotionally undeveloped aggressive hostile persons who take drugs merely for pleasure arising from the unconscious relief of inner tension, as shown by this statement of an addict:

> I was always getting into trouble before I got on drugs—never could seem to get comfortable; I had to go somewhere and do something all the time. I was always in trouble with the law. Some fellows told me about drugs and how good they made you feel, and I tried them. From then on I was content as long as I had my drugs—I didn't care to do anything but to sit around, talk to my friends occasionally, listen to the radio, and only be concerned with the problem of getting money for drugs. This I usually did by picking pockets or other such petty stuff.

The fourth and smallest group is characterized by drug addiction with psychosis. The persons in this group, many of whom have borderline mental illness and sometimes frank mental illness, are seemingly able to make a better adjustment while taking drugs. Sometimes it is difficult to establish the diagnosis and not until drugs are withheld does the psychosis become apparent.

There is a category of patients not included in the aforementioned groups. Kolb [7] originally listed these as patients with psychopathic diathesis. While it is true that some of these exhibit much of the overt behavior pattern of psychopathic persons, when studied carefully they usually fall into a milder behavior or character disorder group, which has characteristics of both the psychoneurotic and the psychopathic groups. Included are persons with severe dependency problems, withdrawn schizoid types, emotionally immature adults, as well as those suffering with the milder degrees of maladjustment and inadaptiveness to the complications of living. Felix [8a] stated that most of the persons falling into this group were making a marginal adjustment to life before becoming acquainted with narcotics. After their first few experiences with narcotics they felt an exhilaration and a sense of relief comparable to the solution of a difficult problem or the shaking off of a heavy responsibility. Many of them also felt an increase in efficiency which, in some cases, appeared to have been actual improvement.

In general, persons who never have been able to make a satisfactory adjustment to life, whose adaptive patterns of behavior have been inadequate, frequently find in morphine, much as the tired business man finds in the preprandial cocktail, a means of return to "normal." This is a false situation which may be recognized by the tired business man but is not recognized by the drug addict. Our studies indicate that patients who have made a marginal degree of emotional adjustment to life, and then have begun to use drugs, lose some of their normal adaptive patterns of adjustment. This regression in personality represents the greatest danger of drug addiction.

DIAGNOSIS OF OPIATE ADDICTION

The diagnosis of addiction is usually made by the patient's statement that he is addicted to and needs drugs. At times, however, addicts attempt to conceal their addiction and the diagnosis may be difficult. There are no pathognomonic physical signs of addiction, but emaciation, needlemarks and abscess scars are suggestive. In some instances, none of these signs may be present. Miosis is not a reliable sign, as partial tolerance to the pupillary constriction caused by morphine develops during addiction. Signs of intoxication, such as ataxia and slurred speech, are seldom present unless the addicts are taking barbiturates or some other sedative drug in addition to morphine. Meperidine hydrochloride addicts are likely to show pronounced dilatation of the pupils and muscular twitching. Laboratory tests for the presence of morphine or other drugs in the urine furnish almost absolute evidence that the patient is receiving drugs, but these tests are difficult to carry out and ordinarily are not available. In questionable cases, the only possible method of diagnosis may be isolation of the patient from the source of drugs and observation for signs of abstinence.

The signs of abstinence have been delineated best by Himmelsbach and his co-workers.[9] One must always distinguish between the true signs of abstinence and signs which are attributable to anxiety reaction or symptoms which are feigned in an effort to obtain drugs. If morphine is abruptly withdrawn from a patient who has been receiving as much as 4 to 6 grains (0.26 to 0.39 Gm.) daily for a period of thirty days or more, few signs are seen in the first eight to sixteen hours of abstinence. The patient is likely to go into a restless tossing sleep which lasts several hours. About fourteen hours after the last dose of the drug, yawning, rhinorrhea, sweating and lacrimation are noticed. These mild signs increase in intensity during the first twenty-four hours of abstinence; thereafter they become constant. At this time, dilatation of the pupils and recurring waves of gooseflesh appear. One must observe patients carefully in order to detect these signs.

TABLE 1.—*Simple Clinical System for Evaluating Intensity of Abstinence Syndrome*

Mild (+)	Moderate (++)
Yawning	Gooseflesh
Lacrimation	Dilated pupils
Rhinorrhea	Anorexia
Perspiration	Muscle tremor
Pronounced (+++)	Severe (++++)
Insomnia	Emesis
Restlessness	Diarrhea
Hyperpnea	Weight loss
Elevation of blood pressure	(5 pounds [2.3 Kg.] in 24 hours)

About thirty-six hours after the last dose, uncontrollable twitching of the muscles occurs (the origin of the term "kicking the habit"). Severe cramps develop in the legs, abdomen and back; anorexia and insomnia become prominent; vomiting and diarrhea are frequently seen. Rectal temperature rises about 2 degrees (F.); respiratory rate rises to 25 to 30 per minute; systolic blood pressure is usually elevated about 15 mm. of mercury; caloric intake is sharply reduced; weight loss averages 5 or 6 pounds (2.3 or 2.7 Kg.) a day. These acute signs and symptoms reach their height forty-eight hours after the last dose of morphine is taken and remain at a peak until seventy-two hours have passed. They then gradually subside over the course of the next five to ten days. Insomnia and changes in pulse rate, body temperature and the hematocrit reading can be detected for as long as three to four months after withdrawal. A simple clinical method for grading the intensity of abstinence is shown in table 1.

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[9] (*a*) Himmelsbach and Small.[4] (*b*) Kolb, L., and Himmelsbach, C. K.: Clinical Studies of Drug Addiction: III. A Critical Review of the Withdrawal Treatments with Method for Evaluating Abstinence Symptoms, Supplement 128 to the Public Health Reports, United States Treasury Department, Public Health Service, 1938, p. 1. (*c*) Himmelsbach, C. K.: Studies of Certain Addiction Characteristics of (a) Dihydromorphine ("Pa[illegible] [illegible] ("Desomorphone"), (c) D[illegible] (d) Methyldihydromorphinc [illegible] Therap. **67**: 239 (Oct.) 1939.

The intensity of abstinence from morphine is dependent more on the dose the addict has been receiving than on any other single factor.[10] Mild grades of abstinence may be detected in former morphine addicts after the administration of as little as 20 mg. (⅓ grain) of morphine four times daily for thirty days. Grades *of abstinence which are as intense as any that can be* developed with any drug for any period of time can be produced by the administration of 60 to 90 mg. (1 to 1½ grains) of morphine four times daily for thirty days.

The picture of abstinence from heroin, dihydromorphinone hydrochloride[11] and metopon[9c] is qualitatively *similar to that of morphine, and the intensity is as* great, except in the case of metopon. Abstinence from these drugs comes on more rapidly than does abstinence from morphine and subsides somewhat more quickly. Abstinence from codeine,[12] while very definite, is less intense than abstinence from morphine, comes on more slowly and subsides more slowly. Abstinence from meperidine hydrochloride ("demerol hydrochloride")[13] is also milder, comes on more rapidly and subsides somewhat more rapidly than the illness from withdrawal of morphine. Abstinence from methadon[14] comes on rather slowly, is mild in intensity and subsides slowly. Abstinence from methadon is qualitatively different from abstinence from morphine in that few of the signs of autonomic dysfunction, which are so prominent following withdrawal of morphine, are seen after withdrawal of methadon. The comparative intensity of abstinence following withdrawal of morphine, codeine, meperidine hydrochloride and methadon is shown in figure 1.

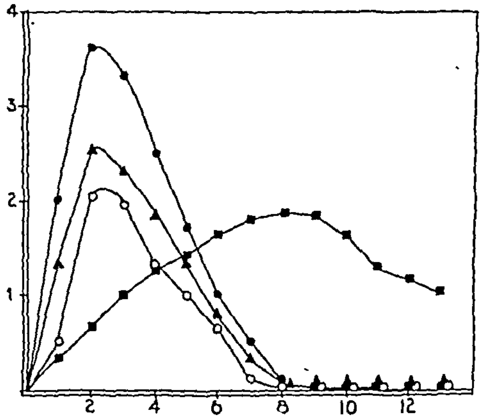

Fig. 1.—Comparative intensity of abstinence from various drugs. The solid circles indicate abstinence from morphine, the open circles abstinence from codeine, the triangles abstinence from meperidine hydrochloride and the squares abstinence from methadon. The vertical line of figure shows the intensity of abstinence (clinical grades), and the horizontal row of figures shows the number of days of abstinence.

Experience is of the utmost importance in diagnosing and treating drug addiction. The factors which have operated to induce addiction must be remembered. The problems which have arisen during the course of a person's becoming addicted to the drug, such as the legal and emotional aspects and other psychiatric and social implications, must be developed in the addiction history and evaluated before the individual addict can be fully understood.

TREATMENT OF DRUG ADDICTION

Withdrawal of drugs from narcotic addicts on an outpatient or office basis should not be undertaken; it almost surely will fail. Withdrawal in any environment except that of a well managed institution under the control of persons trained in treatment of addiction is difficult to accomplish. In the treatment of addiction, *short hospitalization for withdrawal without* a prolonged period of institutional rehabilitation is as futile as simple detoxification for chronic alcoholism. Men and women addicted to the drugs controlled by the Harrison Narcotic Act, as amended, are eligible for treatment as federal prisoners, as federal probationers or as voluntary patients at the Lexington and Fort Worth hospitals. Applicants for voluntary treatment should write to the Surgeon General of the United States Public Health Service, Washington, D. C. Voluntary patients are asked to pay $1 per day toward the cost of their treatment, but this may be waived if the patient is unable to pay. Women are treated only at the Lexing*ton hospital. Since the great majority of addicts are in an impecunious condition, the two Public Health* Service hospitals offer the only opportunity of successful treatment for most addicts.

Although withdrawal is the least important part of the treatment of drug addiction, it should be accomplished in the quickest, smoothest and most humane maner possible, so as to establish good rapport between *patient and physician on which to base subsequent* psychotherapy and rehabilitation.

A large number of methods of withdrawing morphine from addicted patients have been advocated over the years past. Some of these methods of treatment have been illogical, and some have even been more dangerous than abrupt withdrawal of morphine.[9b] We are referring to the purgation, the blister, the scopolamine hydrobromide, atropine, insulin and heavy sedation treatments.

Wieder[15] recently conducted carefully controlled experiments on the effect of insulin on the withdrawal syndrome, since favorable reports on this treatment had appeared in the literature. He observed that insulin *did not allay the withdrawal picture and, in one or two* instances, seemed to make it worse.

Until the discovery of methadon, rapid reduction of the intake of morphine over a period of about ten days has been the most satisfactory method of treatment in our hands. In recent years, it has rarely been necessary to give more than 30 mg. (½ grain) of morphine *every six hours to prevent the appearance of signs of* abstinence in the first two days of withdrawal; usually 15 mg. (¼ grain) of morphine every six hours suffices for this purpose. The dosage of morphine is reduced rapidly at the beginning of withdrawal and more slowly near the end of the withdrawal period. It is unnecessary to substitute codeine for morphine.

Since the introduction of methadon and its acceptability as a physiologic and psychologic substitute for morphine, we have used it extensively in withdrawing morphine from addicts by shifting to methadon which is then withdrawn gradually. Ordinarily one *can substitute* one-fourth the amount of methadon by weight for the dose of morphine the addict has been receiving without signs of abstinence appearing. Since methadon is a slowly acting cumulative drug, it is started in doses of 10 to 20 mg. (1/6 to 1/3 grain) three times daily twenty-four hours before morphine is discontinued. The dose of methadon is then reduced rapidly over the course of the next ten days. Signs of abstinence still will be observed but are not as pronounced as the signs seen during gradual reduction of morphine (fig. 2). Since drug addicts do not like to bear even minimal discomfort, they may complain bitterly during methadon reduction and may refuse to continue treatment, as they often do during morphine reduction.

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[10] Andrews, H. L., and Himmelsbach, C. K.: Relation of the Intensity of the Morphine Abstinence Syndrome to Dosage, J. Pharmacol. & Exper. Therap. **81**: 288 (July) 1944.

[11] King, M. R.; Himmelsbach, C. K., and Sanders, B. S.: Dilaudid (Dihydromorphinone): A Review of the Literature and a Study of Its Addictive Properties, Supplement 113 to the Public Health Reports, United States Treasury Department, Public Health Service, 1935, p. 1.

[12] Himmelsbach, C. K.; Andrews, H. L.; Felix, R. H.; Oberst, F. W., and Davenport, L. F.: Studies on Codeine Addiction, Supplement 158 to the Public Health Reports, Federal Security Agency, Public Health Service, 1940, p. 1.

[13] Himmelsbach, C. K.: Studies of the Addiction Liability of Demerol (D-140), J. Pharmacol. & Exper. Therap. **75**: 64 (May) 1942; Further Studies on the Addiction Liability of Demerol, ibid. **79**: 5 (Sept.) 1943.

[14] Isbell, H.; Wikler, A.; Eddy, N. B.; Wilson, J. L., and Moran, C. F.: Tolerance and Addiction Liability of 6-Dimethylamino-4-4-Diphenyl-Heptanone-3 (Methadon), J. A. M. A. **135**: 888 (Dec. 6) 1947.

[15] Wieder, H.: Objective Evaluation of Insulin Therapy of the Morphine Abstinence Syndrome, to be published.

Adjunctive therapy to either the morphine reduction or the substitution and reduction of methadon treatments includes use of small doses of sedative drugs. It is important not to use large doses of sedative drugs in treating physical dependence since excessive sedation seems to accentuate the development of emotional upsets during withdrawal. Furthermore, the use of sedative drugs prolongs emotional dependence on drug therapy. Flow baths are helpful in relieving excessive nervousness. A generous intake of fluids and an abundant diet should be supplied. In cases of addiction which are complicated by serious debilitating organic disease, the withdrawal period should be extended for as much as several months. The chief complication which has to be dealt with in the withdrawal of morphine in current circumstances is the presence of simultaneous barbiturate addiction. Anxiety and hysterical reactions and attempts at malingering occur frequently during withdrawal and must be handled by appropriate psychotherapeutic technics as they arise. As regards major psychotic reactions, in a series of 400 narcotic addicts observed, only 1 became definitely psychotic during withdrawal.[16]

Prefrontal lobotomy may be useful in the treatment of narcotic addiction so far as it relieves intractable pain.

The patient should remain in an institution for a minimum period of four to six months, so that there will be sufficient time to relieve the patient of any physical ailments and give him an opportunity to develop habits of living, eating, playing and working without drugs. During this period, every effort should be made to help him discover the source of his emotional difficulty and develop some insight into his problems.

Unfortunately, only about 25 per cent of our patients are able to benefit by other than coercive treatment. The remainder are persons whose characters have been so disordered from childhood that they have never been able to grow up and make mature adjustments or establish the proper relationship with other persons. Voluntary patients frequently leave the hospital prematurely and against medical advice, so that, in the present state of our knowledge, we are not able to do much for these persons.

PROPER USE OF NARCOTIC DRUGS

Analgesic Effect.—Since the presence of severe pain which cannot be relieved by simpler means is the major indication for the administration of any of the potent analgesic drugs, an understanding of the mechanism of relief of pain with these drugs is important in their use. Wolff and his collaborators[17] have developed a theory of analgesia which states that the pain-relieving effects of the opiates, or similar drugs, are due to a combination of three factors: (1) elevation of the threshold for perception of pain, (2) an alteration of the emotional reaction to pain and (3) the production of sedation and sleep. Elevation of the pain threshold and the production of sedation and sleep appear to be less important than alteration of the emotional reaction to pain. If morphine is given after the experimental production of pain in human subjects, the pain threshold is not elevated and yet the pain is relieved.[17] Since most patients who receive morphine have experienced pain prior to administration of the drug, elevation of the pain threshold is probably of minor importance in clinical practice. Relief of pain is not necessarily associated with the production of sedation and sleep. The barbiturates, though powerful sedative and hypnotic drugs, are not effective analgesics. Most of the pain-relieving action of the powerful analgesics must, therefore, be ascribed to a rather specific alteration in the emotional reaction to pain. A person with severe pain who receives a dose of morphine, or some other potent analgesic drug, may continue to perceive the pain, but, since the pain seems to have lost its dangerous quality, the patient disregards it and, under the hypnotic influence of the drug, drifts off to sleep. It seems reasonable to assume that the alteration of the emotional reaction to pain by the analgesic drugs may be associated with the euphoria produced by these compounds. The exact sites and mechanism of action of these drugs within the central nervous system are not yet understood, but the fact that patients who have had prefrontal lobotomy for the relief of pain continue to perceive pain, but are not disturbed by it, suggests that the important effect of altering the reaction to pain may be mediated through an action on the cortex of the frontal lobe.

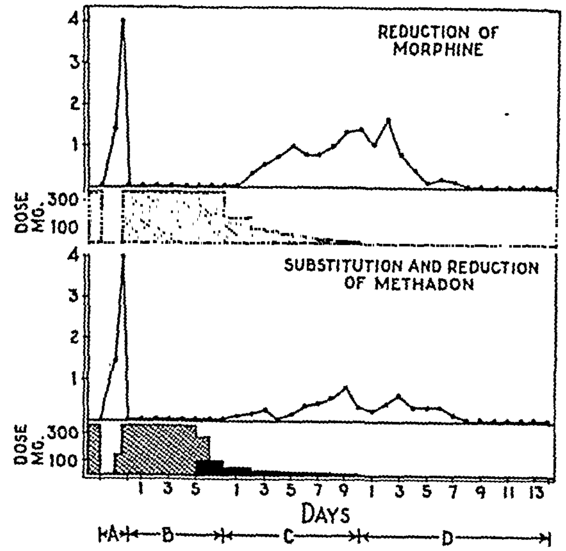

Fig. 2.—Graph of treatment of physical dependence on morphine by substitution and reduction of methadon as compared to reduction of morphine. The points shown represent the average intensity of abstinence (grades 1, 2, 3 and 4 in vertical column at left) in 10 patients who were addicted to 360 mg. (6 grains) of morphine daily. In the first experiment, 5 patients were withdrawn by simple reduction of morphine and 5 patients were withdrawn by substitution of methadon for morphine, followed by reduction of methadon. After fourteen days of total abstinence all 10 subjects were readdicted to morphine and, when withdrawal was again carried out, the 5 men who were originally withdrawn by reduction of morphine were withdrawn by substitution and reduction of methadon, and *vice versa*. Period *A:* preliminary thirty-six hour withdrawal of morphine for proof and assessment of intensity of physical dependence. Period *B:* restabilization on morphine. In the methadon graph, substitution of 90 mg. (1½ grains) of methadon for 360 mg. (6 grains) of morphine was effected on the sixth and seventh days. Period *C:* reduction of morphine or methadon. Period *D:* total abstinence from drugs.

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[16] Pfeffer, A. Z.: Psychosis During Withdrawal of Morphine, Arch. Neurol. & Psychiat. **58**: 221 (Aug.) 1947.

[17] Wolff, H. G.; Hardy, J. D., and Goodell, H.: Studies on Pain: Measurement of the Effect of Morphine, Codeine and Other Opiates on the Pain Threshold and an Analysis of Their Relation to the Pain Experience, J. Clin. Investigation **19**: 659 (July) 1940.

The comparative efficacy of the three new analgesics, metopon, meperidine hydrochloride and methadon and of morphine in altering the factors concerned in analgesia is shown in table 2.

With the exception of the elevation of the pain threshold, which has been measured, the comparisons represent the personal opinions of the authors, and were assigned on the basis of experience with all the drugs.

Morphine.—Morphine is the most familiar drug used for the relief of severe grades of pain. The conditions which produce pain of such intensity as to require morphine cover the entire field of medical practice, are well known to physicians and need not be recapitulated here. It is more important to remember that the physician must be careful in using morphine, or any equivalent drug, in situations in which the patient's complaints are out of proportion with the cause of the pain. Such patients usually require reassurance and emotional support rather than drug therapy. Morphine is contraindicated in acute abdominal pain until a definite diagnosis has been established and specific treatment begun. It should not be used in the treatment of head injuries or in any condition associated with increased intracranial pressure. Morphine is also used to relieve severe dyspnea due to cardiac disease or pulmonary disease, but the drug is almost always contraindicated in bronchial asthma. Morphine remains the best drug for allaying fear prior to operative procedures. Morphine should never be used primarily for its sedative action, since less dangerous drugs are available for this purpose.

Table 2.—*Comparative Efficacy of Single Doses of New Drugs in Altering Various Factors Concerned in Analgesia* *

Drug	Dose (Mg.)	Elevation of Pain Threshold	Alteration of Reaction to Pain	Sedation	Duration of Clinical Relief of Pain-Hours
Morphine	10	2	2	1	4
Metopon	6	1	1	3	4
Meperidine hydrochloride	100	4	3	2	3
Methadon	5-10	3	4	4	4-10
Codeine	30	5	5	5	4

* The figure 1 indicates the most effective of the 4 drugs in producing the effect noted; the figure 4 indicates the least effective of the 4 drugs.

The chief disadvantages of morphine are the production of vomiting, the depression of respiration, the induction of spasm of smooth muscle and the rapid development of addiction under conditions of chronic use. Despite these disadvantages, morphine, because of its cheapness, reliability and rapidity of action, remains the drug of choice for conditions requiring relief of severe pain for periods of less than two weeks. If pain relief is required over a longer period, metopon and methadon are more suitable drugs.

Codeine.—Codeine is used for grades of pain which cannot be relieved by antipyretic drugs, but which are not severe enough to require morphine or an equivalent drug. As with morphine, care should be taken not to use codeine for patients who are overreacting emotionally to minor pathologic disturbances. The administration of codeine should be stopped when the need for it has passed, since it possesses definite, though low grade, addiction liability. The second indication for the administration of codeine is the presence of severe cough, but the use of the drug for this purpose should be carefully limited.[18] Coughing serves a useful purpose and should be interfered with only when the cough is so distressing and so constant that the patient is disturbed and weakened. It should be prescribed only after other measures have failed. One should remember that, in conditions in which cough is due to irritation of the mucous membranes of the pharynx or larger air passages, inhalations of medical steam and the use of lozenges or syrups containing volatile oils with local anesthetic properties are more effective than the use of codeine.

Metopon.—Metopon is as effective by mouth as when administered hypodermically. Tolerance develops more slowly to metopon [19] than to morphine, and, when given orally, metopon produces less sedation and less mental confusion and is not as nauseating as morphine.[19] After tolerance is developed to metopon, the full analgesic potency of the drug is restored by a short period of withdrawal.[20] Metopon is regarded as an excellent drug for oral use in the relief of chronic pain. It is difficult to manufacture; it is rather expensive, and the amount available probably will always be limited. Its total addiction liability probably equals that of morphine.

Meperidine Hydrochloride.—Meperidine hydrochloride is a synthetic piperidine derivative which has been widely used in medical practice since 1941. It is not as effective an analgesic as are morphine, metopon and methadon, but has the advantage of possessing a spasmolytic action on the smooth muscle of the intestine of human beings [21] and the ureter.[22] However, the drug has recently been shown to increase intrabiliary pressure.[23] The drug is less likely to produce nausea and vomiting than is morphine and is said to produce less respiratory depression. It is particularly useful in the relief of pain associated with spasm of smooth muscle (except in biliary colic) and can be used in persons who are intolerant to morphine. The addiction liability of meperidine hydrochloride is rather high—reports in the lay press notwithstanding. Many cases of both "primary" and "secondary" addiction to this drug have been seen.[24]

Methadon.—Methadon is a synthetic heptanone derivative which is very morphine-like in its pharmacologic actions. In human beings it has most of the disadvantages of morphine. It produces constitpation, nausea, vomiting, itching of the skin and respiratory depression.[14] It is not well tolerated by mouth and causes more local reaction than morphine when injected subcutaneously. Methadon is a slowly acting cumulative drug and may not, in a single dose, provide adequate pain relief. Due to its slowness of action and to the low degree of sedation obtained with single doses, it is not suitable for preoperative medication or for conditions requiring rapid pain relief. In repeated dosage, methadon has a powerful cumulative sedative action, so that patients who are receiving the drug at short intervals must be carefully observed for evidence of excessive drowsiness. It is, however, an excellent drug for the relief of chronic pain, because tolerance develops to its analgesic actions more slowly than does tolerance to the analgesic action of morphine and the degree of physical dependence on methadon is less than that of physical dependence on morphine.

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[18] Hatcher, R. A.: Narcotics in the Treatment of Coughing, J. A. M. A. **96:** 1383 (April 25) 1931.

[19] Eddy, N. B.: Metopon, J. Am. Pharm. A. (Scient. Edition) S: 430 (Sept.) 1947.

[20] Lee, L. E.: Studies on Morphine, Codeine and Their Derivatives: XVI. Clinical Studies of Morphine, Methyldihydromorphinone (Metopon) and Dihydrodesoxymorphinone-D (Desomorphine), J. Pharmacol. & Exper. Therap. **75:** 161 (June) 1942.

[21] Batterman, R. C.: Clinical Effectiveness and Safety of a New Synthetic Analgesic Drug, Demerol, Arch. Int. Med. **71:** 345 (May) 1943. Yonkman, F. F.; Noth, P. H., and Hecht, H. H.: Demerol, a New Synthetic, Analgesic, Spasmolytic and Sedative Agent: II. Clinical Observations, Ann. Int. Med. **21:** 17 (July) 1944.

[22] Climenko, D. R., and Berg, H.: The Influence of Demerol on the Ureter, J. Urol. **49:** 255 (Feb.) 1943.

[23] Gaensler, E. A.; McGowan, J. M., and Henderson, F. F.: A Comparative Study of the Action of Demerol and Opium Alkaloids in Relation to Biliary Spasm, Surgery **23:** 211 (Feb.) 1948.

[24] Wieder, H.: Addiction to Meperidine Hydrochloride (Demerol Hydrochloride): Report of Three Cases, J. A. M. A. **132:** 1066 (Dec. 28) 1946. Anslinger, H. J.: Demerol, Correspondence, ibid. **132:** 43 (Sept. 7) 1946.

The total addiction liability of methadon is almost equal to that of morphine, although its physical dependence liability is less.[14] The euphoric effect of methadon in the addict (and undoubtedly in the addiction-prone person) is equal to that of morphine, so that its habituation liability is high. The comparative addiction liabilities of the commonly used analgesic drugs are shown in table 3.

PREVENTION OF ABUSE OF NARCOTIC DRUGS

In general, there are two approaches to the prevention of drug addiction. The first line of effort is the long range program envisaged under the National Mental Health Act. The basic problem in preventing drug addiction is, of course, the development of a people so emotionally sound and well integrated that they will have no need for chemical aids to adaptive behavior. Such proper personality integrations, which can be achieved only through well adjusted parents, normal environment and proper schooling in social behavior, would do much to prevent drug addiction. The high incidence of emotional instability in our times, as reflected by the large numbers of noncombat psychiatric casualties during the war and the increasing use of alcohol, indicates that we have a long way to go in helping persons to adjust to life in our increasingly complex society.

The second approach to the prevention of drug addiction, and the point of immediate attack, is to separate effectively the addiction-prone person, or the ex-addict, from narcotic drugs. The Harrison Narcotic Act, with its legal prohibitions and penalties, its vigilance in preventing the introduction of contraband narcotics into the market and its careful control over use of narcotics, has had a progressive influence on the reduction and prevention of narcotic addiction. In addition to the Harrison Narcotic Act, the Geneva Convention of the League of Nations has operated to reduce worldwide production and refining of opium.

Although accidental addiction by medical use occurs occasionally, the great majority of patients become addicted under the influence of other addicts, and the efforts of the Public Health Service hospitals for the treatment of narcotic addicts at Fort Worth, Tex., and Lexington, Ky., prevent addiction so far as they cure persons who would otherwise become foci of "infection." The hospital at Lexington alone has treated slightly more than 11,000 patients since 1935. Follow-up reports indicate that over 16 per cent of these patients have remained abstinent over a seven year period, and probably at least an additional 20 per cent have remained abstinent for extended periods of time.

Physicians should keep the danger of addiction to analgesic drugs in mind and should exercise caution in prescribing them. These drugs should never be used when other drugs or other measures will suffice. The dosage should be held to the minimum compatible with adequate pain relief, and the interval between doses should be as great as possible. The drugs should be discontinued as soon as the need for pain relief has passed. They should never be used primarily for their sedative actions. In chronic cases, they should be administered orally whenever possible. Self medication with a hypodermic should not be allowed. The drugs should not be given intravenously unless the need for rapid pain relief is great, since this method produces maximum euphoria and carries an increased risk of addiction. The drugs should not be administered to persons with known neurotic personalities unless definite indications for the use of a potent analgesic are present. Narcotic drugs should never be used for the relief of symptoms due to alcoholic excess, since alcoholic persons are very addiction-prone. Analgesic drugs should rarely, or never, be used in the treatment of asthma, since asthmatic persons are very susceptible to addiction. It is significant that in many cases of morphine addiction and several of the cases of primary addiction to meperidine hydrochloride observed at Lexington addiction resulted from its use for the relief of asthma.

Suggestions are made from time to time that clinics should be established where known addicts would be given drugs free, or sold drugs at minimum cost, for the continued support of their addiction. The proponents of this plan believe that addiction is incurable or that treatment is inhumane and that if addicts are given the minimum amounts of drugs necessary to maintain their addiction lawlessness attendant on contraband traffic in narcotic drugs would be eliminated. This reasoning is unrealistic, as has been shown by several attempts in this country and abroad that have failed. Addicts on such "rations" connive to get more than their allotted amount of drugs, so that they can increase their dosage and continue to obtain a euphoric effect. They may sell, or give away, part of the extra supply so obtained to persons who are not addicted. This creates new addicts who are potential customers for the contraband market and thus increases the problem which the ration plan is supposed to abolish. Furthermore, many addicts can be treated and learn to live a useful effective life instead of one of personal neglect, indolence and semisomnolence which is so typical of the addict. Addiction is 'infectious," and treatment, rather than support of addiction, is necessary to minimize its spread.

Table 3.—*Comparative Addiction Liability of Analgesic Drugs* *

Drug	Physical Dependence Liability	Habituation Liability	Total
Morphine	4	4	8
Dihydromorphinone hydrochloride	4	4	8
[illegible]	3	4	7
[illegible]	2	3	5
[illegible]	1	4	5
Codeine	2	1	3

* Comparative addiction liability of analgesic drugs. The numeral 4 indicates that the particular drug has the greatest liability of all the drugs with respect to the particular addiction characteristic shown; the numeral 1 indicates the lowest liability; the sum of the two characteristics gives the total addition liability, the highest possible addiction liability score being 8 and the lowest 0.

SUMMARY

Because of vigorous enforcement of the Harrison Narcotic Act and to treatment of addicts in federal facilities the total number of narcotic drug addicts in the United States has declined from 150,000 to 200,000 in 1914 to approximately 48,000 at the present time.

Drug addiction is a state in which a person has lost the power of self control with reference to a drug and abuses the use of the drug to such an extent that the person or society is harmed. The drugs to which addiction commonly occurs in the United States are opium and the opium alkaloids, the synthetic morphine-like analgesics, the barbiturates, bromides, alcohol, marihuana, cocaine, amphetamine and, rarely, peyote. The characteristics of addiction to these drugs are discussed.

Drug addiction is primarily a psychiatric problem and should be regarded as a symptom of a basic underlying personality maladjustment. The common personality types of drug addicts are described. The diagnosis of narcotic addiction is usually easy, but may be difficult. Isolation of the patient and observation for signs of abstinence is, at times, the only conclusive means of diagnosis.

Withdrawal of drugs is the first and the least important step in the treatment of narcotic addiction. Withdrawal of morphine is best achieved by a ten day reduction of morphine or by substitution and reduction of methadon. Institutional therapy is necessary for the successful treatment of addiction. A minimum period of treatment of four to six months is essential. The patient's entire personality must be reoriented by appropriate psychotherapeutic technics.

The pharmacologic characteristics, the advantages and disadvantages, and the comparative addiction liabilities of the older and newer analgesic drugs are discussed. The prevention of drug addiction involves the development of an emotionally sound people through the program of the National Mental Health Act, the reduction of the illegitimate use of narcotics by the control measures provided for under the Harrison Narcotic Act, the isolation and treatment of addicts, which prevents them from spreading addiction, and proper cautious use of addicting drugs by physicians.

EXTRAOCULAR MALIGNANT MELANOBLASTOMA

A Clinical Study

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The treatment of malignant melanoblastomas presents a discouraging and difficult problem. The mortality rate is notoriously high and the results of treatment uniformly poor.

The physician who seeks to increase his knowledge of the melanotic tumors is confronted by a large volume of interesting but confusing literature. We have learned a great deal about these tumors through clinical experience. An enormous amount of investigation has also been carried out in regard to the related developmental, cytologic, genetic, endocrinologic, chemical and physical aspects of pigment cell activity. So urgent was the need for correlating this basic knowledge that a conference was recently held to discuss all the various aspects of the "Biology of Normal and Atypical Pigment Cell Growth."[1] This historic meeting, in which many of the pioneers and leaders of current thought in this field participated, stands as a milestone in efforts to understand and combat these complex lesions.

It befalls us as clinicians to interpret and apply this basic knowledge as it becomes available to us. We are in turn obligated to keep our therapeutic results under constant surveillance. This study was undertaken in order that the experience of University Hospital with extraocular malignant melanoblastomas during recent years could be evaluated and recorded.

BASIC CHARACTERISTICS OF MELANOBLASTOMAS

In general one may say that malignant melanoblastomas usually arise in benign pigmented nevi or moles of the skin, of the meninges or within the eye. The latter site has been excluded from this study by definition. Fortunately the incidence of malignant degeneration in benign nevi is not great. Whereas most persons have a variable number of nevi on their cutaneous surfaces, malignant melanoblastomas account for less than 1 per cent of all malignant tumors.[2]

Nevi are now generally considered to be of neurogenic or ectodermal origin. This concept was first proposed by Soldan in 1899, but it remained for Masson to present decisive evidence in its support in 1926.[3] As such these lesions are closely related to other tumors of neurogenic origin, notably the neurofibromas.

There are two types of normal cells which may contain the pigment "melanin," melanoblasts and melanophores. Only the melanoblasts have the power actively to synthesize the pigment, and it is these or related nevus cells which undergo malignant transformation to melanoblastomas. Normal melanoblasts contain an intracellular oxidase, known as "dopa" oxidase, which acts on a precursor chromogen, or melanogen, to produce melanin. This can be demonstrated in the laboratory by substituting 3, 4-dihydroxyphenylalanine for the melanogen, the so-called "dopa reaction" of Bloch. Melanin itself can in turn be identified by various silver impregnation technics.

If all melanoblasts contained an identifiable amount of melanin the microscopic diagnosis of the melanoblastomas would be relatively easy. Unfortunately, many of the most malignant ones are amelonotic and their identification rests on histologic characteristics alone. This is extremely difficult, as they may closely resemble poorly differentiated neoplasms of other types. Likewise, it is difficult, and unreliable, to estimate the degree of malignancy and prognosis of malignant melanoblastomas on their histologic appearance.

These tumors may metastasize by way of the lymphatics or directly through the blood stream. This becomes of importance in planning therapy, as dissections of regional lymph nodes are of no avail in those lesions which may already have invaded the blood stream and are worth while only if a significant number metastasize initially to the lymph nodes alone.

The term "malignant melanoblastoma" is used to avoid ambiguity. It includes those lesions which are variously described as malignant melanoma, melanocarcinoma or melanosarcoma.

CLINICAL MATERIAL

The records were selected of the 130 patients examined or treated in University Hospital from 1931 to 1946 with the presumptive diagnosis of malignant melanoblastoma of extraocular origin. After careful scrutiny only 93 were considered to have had true malignant melanoblastomas. Seven others had lesions which histologically were considered to be benign forms of melanoblastoma, and this was confirmed by their subsequent benign courses. Twenty-seven patients had

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Read before the Section on General Practice at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

[1] The Biology of Melanomas, vol. 4, New York, The New York Academy of Sciences, 1948.

[2] MacDonald, E. J.: Malignant Melanoma in Connecticut, in footnote 1, p. 71.

[3] Masson, P.: Les naevi pigmentaires, tumeurs nerveuses, Ann. d'anat. path. 3: 417, 1926.

highly malignant poorly differentiated lesions with histologic characteristics suggesting that they may have been amelanotic malignant melanoblastomas. A positive diagnosis of melanoblastoma was not justified, however, and so they were excluded from the study. Three patients were in the prepubertal age group.

PREPUBERTAL MELANOMA

The opinion has become prevalent in recent years that true malignant melanoblastoma rarely exists before the age of puberty.[4] Although lesions at this age frequently demonstrate histologic characteristics indistinguishable from malignant melanoblastoma, careful follow-up studies after adequate excision reveal that metastases seldom occur. Under the stimulus of the endocrinal changes incident to puberty or later pregnancy these lesions, if untreated, may become highly malignant and rapidly fatal.

Three patients in this series fell within the prepubertal age group. These children were 1, 2 and 7 years of age. The lesions in all resembled typical nevi and showed some clinical evidence of activity as manifested by recent increase in size or tendency to bleed. All presented histologic characteristics indistinguishable from malignant melanoblastoma and had been so diagnosed initially. These patients all survive at the present time after intervals of two years and four months, six years and three months, and twelve years and ten months, respectively. In none has evidence developed of metastases.

GROSS APPEARANCE OF INITIAL LESIONS

We are all aware of the potential danger of malignant degeneration in the typical deeply pigmented blue-black mole. The members of the profession and the public have been repeatedly warned to view such lesions with alarm. Although a majority of these melanoblastomas were found to have arisen in lesions that were clinically recognizable as "moles," they were of variable degrees of pigmentation, and many were but lightly pigmented (table 1).

Table 1.—*Initial Description of Lesion*

Typical pigmented mole		53
Origin undetermined or uncertain		13
Atypical cutaneous lesion		27
Granuloma	1	
Pimple	2	
Nonpigmented tumor	7	
Whitehead	1	
Swelling	1	
Chronic irritation	1	
Papilloma	3	
Blood blister	1	
Wart	2	
Post-traumatic growth or ulcer	5	
Ulcer in pigmented scar	1	
Nonpigmented nodule or lump	2	
Total		93

A significant number, 29 per cent, of the malignant lesions had their origin in cutaneous tumors which had not been clinically recognized as nevi or as being potentially dangerous by either the patient or his physician. Doubtless many of these were true nevi, but they were sufficiently atypical to defy recognition. Many had been subjected to treatment by various forms of cautery without previous biopsy and with uniformly disastrous results.

These atypical lesions were frequently amelanotic. They were variously described as being "blood blisters," "hard nodules," "persistent pimples," "warts," "nonpigmented papillomas" or "pigmented scars from previous trauma." Particularly insidious in onset were five ulcerating or fungating lesions of the feet which were attributed to trauma in that they were first noticed after injury and had failed to heal. None of the patients had been previously aware of the presence of a pigmented mole on the foot. All were beyond hope of cure when the diagnosis of melanoblastoma was finally made by histologic study.

Table 2.—*Anatomic Distribution and Curability*

	Total Number	Number "Curable"
1. Head, face and neck	29	13
2 Lower extremities	24	11
3. Trunk	18	6
4. Undetermined or uncertain	13	0
5. Upper extremities	7	2
6. External genitalia	2	2
7. Meninges	0	0
Total	93	34

The only safe course is to regard any tumor of the skin of uncertain causation, regardless of the degree of pigmentation, as potentially malignant if it is subjected to repeated trauma, and to remove it prophylactically by wide surgical excision. This is doubly imperative if the lesion shows signs of clinical activity as manifested by rapid increase in size or degree of pigmentation, signs of inflammation, persistent ulceration, or bleeding. So far as is feasible, it is advisable to accomplish excision during the prepubertal age period. All lesions so removed should be examined microscopically by a competent pathologist; only he can authoritatively pass judgment as to the "safety" of a lesion. If microscopic evidence of malignant melanoblastoma does exist, the patient should be advised to have more radical surgical treatment immediately.

The prophylactic removal of nevi by cautery has a twofold danger and should be discouraged. Not only may incomplete removal stimulate more rapid dissemination of an early malignant lesion, but coagulation of the tissue renders microscopic examination difficult and unreliable. Wide surgical excision with the scalpel circumvents both of these dangers.

ANATOMIC DISTRIBUTION OF INITIAL LESIONS

Primary lesions were most frequently found arising on head, face or neck (table 2). Lesions of the lower extremities and of the trunk were next most common. Malignant melanoblastomas of the upper extremities and of the external genitalia were relatively uncommon. There were no proved lesions of the meninges in this series.

The primary site could not be identified with certainty in 13 patients despite careful clinical search. Autopsies were performed on several without disclosing the primary site. One of these lesions was thought clinically to have arisen in the rectum. There is controversy at present as to whether malignant melanoblastomas can arise within the gastrointestinal tract, and so that lesion was considered to be of uncertain origin. Most of these patients had extensive metastases when first seen.

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[4] Pack, G. T.: Prepubertal Melanoma of Skin, Surg., Gynec. & Obst. 86: 374, 1948.

CURABILITY

A discouraging finding in this study is the fact that only 34 patients (36.5 per cent) had lesions which were still accessible to surgical treatment when first examined by associates and me (table 2). Although the prognosis of many of those considered curable was also admittedly poor because of the presence of recurrent local lesions, cutaneous metastases or metastases to regional lymph nodes, they presented no evidence of generalized metastases. This finding is appalling, especially when one considers that for the most part melanoblastomas arise on the surface of the skin where they invite constant inspection. Yet the incidence of incurability ranks with that of carcinoma of the lung or stomach, the early diagnosis of which is understandably difficult.

TABLE 3.—*Survival Related to Anatomic Distribution*

	No. of Patients	5 Year Arrests		Living at Present	
		No.	Per Cent	No.	Per Cent
Head, face and neck	22	3	13.6	0	0
Trunk	11	2	18.2	2	18.2
Upper extremity	7	2	28.6	0	0
Lower extremity	14	8	57.1	2	14.3
Primary undetermined	9	1	11.1	1	11.1
Total	63	16	25.4	5	7.0

RESULTS OF THERAPY

During the period covered by this study the treatment of malignant melanoblastoma in this hospital was relatively conservative. It consisted for the most part of wide surgical excision of the primary lesion and dissection of regional lymph nodes only if palpable metastases were present. Prophylactic dissections of nodes were sporadically recommended but apparently not forcibly enough, as they were frequently refused by the patients, being actually performed on only three occasions.

Prior to 1942 a total of 63 patients with proved malignant melanoblastomas were examined (table 3). Many of these were beyond hope of cure when first seen. Sixteen patients survived five years or longer, a five year arrest rate of 25.4 per cent. Only 5 of these patients, all of whom had early lesions when treated, remain alive at the present time. Ten died of known metastatic melanoblastoma between their fifth and tenth postoperative years (table 4). One patient died without proved metastases, although autopsy was not done and there was some question as to whether visceral metastases might have been present. There were no ten year arrests.

The known survival rate beyond the five year period is therefore only 7.9 per cent. despite five year arrests of 25.4 per cent. De Cholnoky [5] found the average five year arrest rate of various authors to be 19.2 per cent. Pack,[6] a strong advocate of radical therapy, reported a five year survival rate of 18 per cent for primary lesions without metastases to nodes and 15 per cent for malignant melanoblastoma metastatic to regional lymph nodes. Since the adoption of a radical surgical approach his incidence of five year arrests has improved 600 per cent.

The series of patients in this hospital is too small from which to draw general conclusions regarding the relative prognosis for cure of lesions arising in the various anatomic areas. There are too many variable factors involved to make such a comparison justifiable. It is apparent, however (table 3), that lesions of head, face and neck showed the lowest incidence of five year survivals. Lesions of the lower extremities appeared to offer the best hope for prolonged survival. This is in variance with other reported series.

This tendency was also reflected in the fact that of the patients dying of metastatic melanoblastoma, those with lesions of head, face and neck survived an average of 26.6 months, while those with lesions of the lower extremities survived an average of 44.2 months. If credence is given to this observation it is possibly related to the rich blood supply of the head region, rendering early blood stream metastases more likely. One might also expect prophylactic dissections of lymph nodes to be less effective in lesions of this area than in those of the extremities.

In this hospital dissections of regional lymph nodes performed after metastases to nodes had become palpable proved to be of little therapeutic value. Ten patients were so treated. Seven died within an average time of 19.3 months; the longest survival was 59.3 months. Three patients were still alive without further evidence of metastases at the time of the completion of this study. The average survival of these at that time was only eleven months, however, and the maximum survival only fourteen months.

PRINCIPLES OF THERAPY

The only hope at present for improving the survival rate of patients with malignant melanoblastomas lies in earlier and more radical surgical therapy. Handley[7] first proposed in 1907 that these lesions be attacked radically, in a manner similar to that employed in the treatment of carcinoma of the breast, by wide local excision of the primary lesion and dissection of regional lymph nodes. This principle has not been universally accepted. Because of the frequency of early bloodborne metastases many surgeons have felt that prophylactic dissections of lymph nodes are futile and have omitted that procedure.

TABLE 4.—*Length of Survival—Initial Diagnosis Until Death from Melanoblastoma in Lesions of Known Origin*

Years	Number
0-1	19
1-2	15
2-3	17
3-4	4
4-5	2
5-6	3
6-7	2
7-8	2
8-9	2
9-10	1

Recently Pack and his associates [8] have popularized *the principle of "excision and dissection in continuity."* This entails the removal of the local lesion by wide excision, sacrificing a wide area of normal skin surrounding it and an even wider area of deep fascia, along which lymphatic metastases are known to permeate. At the same operation the regional lymph nodes are dissected out, as well as a wide area of intervening fascia and subcutaneous tissue. If the operation is properly carried out a rotation flap or a split thickness skin graft is usually necessary to cover the local defect.

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[5] de Cholnoky, T.: Malignant Melanoma: A Clinical Study of One Hundred and Seventeen Cases, Ann. Surg. **113**: 392, 1941.

[6] Pack, G. T.: A Clinical Study of Pigmented Nevi and Melanomas, in footnote 1, p. 61.

[7] Handley, W. S.: The Hunterian Lectures on the Pathology of Melanotic Growths in Relation to Their Operative Treatment, Lancet **1**: 927 and 996, 1907.

[8] Pack, G. T.; Scharnagel, I., and Marfet, M.: The Principle of Excision and Dissection in Continuity for Primary and Metastatic Melanoma of Skin, Surgery **17**: 849, 1945.

Unfortunately, the greatest number of melanoblastomas are not adaptable to this ideal plan of therapy because of their anatomic location; the primary lesions are too far removed from the regional lymph nodes to make it feasible. In these more peripheral lesions if there are no demonstrable metastases the initial procedure recommended is that of wide excision of the primary lesion, or amputation of the digit if it should arise on a finger or toe. After a suitable "filtering out" period of approximately six weeks, during which time free tumor cells may have an opportunity to become entrapped in the regional lymph nodes, a prophylactic radical dissection of regional lymph nodes should be done. Many lesions arise in anatomic areas in which there is probable lymphatic drainage to several divergent groups of nodes. Dissections of these multiple groups of nodes should be accomplished in such cases.

The greatest problem arises in those patients who already have local recurrences, regional cutaneous metastases or metastases to regional lymph nodes when first examined by the surgeon. In such patients the lymphatics are in all probability extensively invaded by malignant cells. The experience in this hospital with dissections of lymph nodes at such a late date has been discouraging. Pack and his associates[9] have recently proposed attacking such lesions by radical amputation. They are of the opinion that interscapulothoracic amputations should be done for these advanced lesions arising in the upper extremities and hip joint disarticulation, or occasionally hemipelvectomy, for those of the lower extremities. Thorough dissections of lymph nodes are done at the same time. In this hospital so radical procedures have not been used in the past, and patients with this type of neoplasm have been found to be rather resistant to acceptance of even less radical procedures. It is my opinion, however, that such a radical plan of attack is justified by the high mortality rate and offers the only hope at present for improving the admittedly poor results in advanced lesions.

Prepubertal melanomas are effectively treated by simple excision. Prophylactic dissections of nodes are not indicated, but the child should be observed periodically as a precautionary measure.

Malignant melanoblastomas are uniformly radioresistant. Roentgen therapy has no place in their treatment.

SUMMARY

A brief summary of the experience of the surgical staff of the University of Michigan Hospital with the management of malignant melanoblastomas during the years 1931 to 1946 has been presented. The five year arrest rate was 25.4 per cent. All but 7.9 per cent have succumbed of metastases ultimately. There have been no ten year arrests.

The chief hope at present for more effective control of these lesions lies in more vigorous prophylaxis. Any tumor of the skin regardless of color the origin of which is not obvious should be widely excised surgically and examined histologically. This is especially true if the lesion is subjected to repeated trauma or shows clinical evidence of change.

The present concepts of surgical management of malignant melanoblastomas of extraocular origin have been outlined and more radical surgical intervention has been encouraged.

ABSTRACT OF DISCUSSION

Dr. S. William Becker, Chicago: The question of the origin of melanoma from nevi is not yet answered. Deland and Holmes (Malignant Melanoma, *New Eng. J. Med.* **220:** 651, 1939) found that melanomas originated in nevi in only 18 per cent of their cases. Miescher (Die Entstehung der bösartigen Melanome der Haut, *Virchow's Arch. f. path. Anat.* **264:**85, 1927) found such an origin in 25 per cent of instances. In my own series, study of which has not yet been completed, the incidence will be probably less than 25 per cent. Serial sections would be required for accurate determination. The melanoma may outgrow the original nevus so that the latter is not identified on routine section. Negroes rarely have pigmented nevi, but melanoma of the feet is not so uncommon in Africa. Assumption that a preexisting brown lesion is a mole is only valid if it has been present since early in life. If it has been present only a few months or years, it is more apt to be lentigo maligna, which is really early malignant melanoma. Biopsies should be made of all such lesions for accurate diagnosis. It is no longer advisable to watch tumors, but all or part of the tissue should be removed for biopsy. Part of a tumor may easily be removed by means of the cutaneous punch. Since the average person has eighteen to twenty nevi, it is not feasible to remove all of them prophylactically. However, lesions in areas subject to irritation, or those which are growing or becoming darker should be excised and subjected to biopsy. As soon as diagnosis of melanoma has been made, the areas should be widely and deeply excised, along with the regional lymph nodes, regardless of whether they are enlarged. It is only in this way that the high mortality figures can be reduced.

Dr. Marion S. DeWeese, Ann Arbor, Mich.: My interest in these lesions is primarily from the standpoint of the surgeon, and surgical therapy, though the best treatment at present, is unsatisfactory for the late lesions. In the series at the University Hospital only 36.5 per cent were amenable to any form of surgical therapy when they came to us. The best one had to offer them was in most cases a mutilating operation with no promise of cure. The logical group on which to focus attention is the 63.5 per cent who are incurable. The logical time to attack them is before they have reached such an advanced stage, and the logical person to do that is the family physician, who sees his patients continuously from infancy on. Only by his awareness of the danger involved, his advice to the patients and subsequent treatment can this high mortality rate be further reduced. The fact that a number of these highly malignant tumors are being reached at a curable stage bespeaks a good job for the general practitioner. With his increased vigilance, results should be even better.

Narcolepsy.—The term "narcolepsy" was introduced in 1880 by Gelineau to describe a "rare neurosis characterized by an invincible need for sleep, ordinarily of short duration, occurring at longer or shorter intervals of time, often several times a day, forcing the subject to fall to the ground, or lie down in order to avoid falling." Reports by others pointed out that, in addition to the attacks of sleep, patients sometimes fell, without disturbance of consciousness, as a result of sudden loss of muscle tone, which appeared during a spontaneous burst of emotion, usually associated with vigorous laughter. This sudden loss of muscle tone, called "cataplexy," is sometimes found in persons who have never had an attack of sleep, and the contrary is equally true. The one term "narcolepsy" now has come to include both varieties of symptoms.—Barker, Wayne, M.D., Tr. Psychosomatic Medicine, July-August 1948.

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[9] Pack, G. T.; Ehrlich, H. E., and Gentil, F. de C.: Radical Amputations of the Extremities in the Treatment of Cancer, Surg., Gynec. & Obst. 84: 1105, 1947.

ORALLY ADMINISTERED PENICILLIN IN PATIENTS WITH RHEUMATIC FEVER

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In a previously reported study conducted from November 1945 to June 1946 on the wards of the House of the Good Samaritan penicillin was administered intramuscularly to all patients with rheumatic fever found to have throat cultures which were positive for the hemolytic streptococcus.[1] This study, which was made with a view to reducing the spread of hemolytic streptococci from one patient to another, was partially successful in that of a total of 20 cases, hemolytic streptococci were eliminated permanently from the throat cultures in 17. Furthermore, only one of the three strains which could not be completely eradicated belonged to serologic group A.

The studies which are the basis of the present report were a continuation and extension of the previous studies and were carried out from July 1946 through June 1947. Our objectives were as follows: (1) to determine whether orally as well as intramuscularly administered penicillin could be effective in reducing the hemolytic streptococcus carrier rate among ward patients; (2) to determine whether such reduction in carrier rate together with prompt penicillin therapy of patients acquiring hemolytic streptococcus infection would reduce the spread of infection among ward patients; (3) to determine whether hemolytic streptococci could be eradicated from patients' throats by relatively infrequent doses of orally administered penicillin and in this indirect manner to gain information as to whether penicillin might be practicable for the prevention of hemolytic streptococcus infection and hence for the prevention of rheumatic fever and (4) to determine whether the prompt treatment of hemolytic streptococcus infections would influence the immune response and prevent recurrences of rheumatic fever.

In the course of these studies we had the opportunity to make some limited observations on the efficacy of the oral administration of penicillin as a prophylactic measure against hemolytic streptococcus infections, and we shall include these observations in the present report.

METHODS OF STUDY

Observations were confined chiefly to patients on the wards of the House of the Good Samaritan, most of whom were ill or had been recently ill with active rheumatic fever. The ages of the patients varied from 3 to 17 years and averaged 9.9 years.

Cultures were made from the throats of all patients at least three times weekly. On newly admitted patients, on patients found to be carriers or suspected of having hemolytic streptococcus infection and in certain other circumstances the frequency of the throat cultures was increased to once every day, and sometimes several cultures were taken in one day. Throat culture swabs were planted and streaked directly on blood agar plates containing 5 per cent horse blood. Positive cultures were classified from plus 1 to plus 4 according to the heaviness of growth of hemolytic streptococci on the culture medium.

Strains were isolated from the blood agar plates of all positive cultures for serologic grouping and typing by the Lancefield precipitin technic[2] and for the determination of penicillin bacteriostatic sensitivity. The penicillin sensitivity tests were always controlled with a stock strain of hemolytic streptococcus the sensitivity of which remained constant at 0.03 unit.

Serum was obtained for antistreptolysin 0 determinations on all patients every two weeks, and the tests were performed by a modification of the method of Hodge and Swift.[3] Penicillin blood levels were not observed sufficiently often to be worthy of inclusion in this report.

Patients referred to the House of the Good Samaritan were admitted to a special isolation wing of the hospital and were not placed with other patients in the open wards until it was evident that their throat cultures were consistently negative for hemolytic streptococci. Patients found on admission to be harboring hemolytic streptococci in their throats were treated as carriers in a manner outlined in a subsequent paragraph. Patients whose throat cultures changed abruptly from consistently negative to strongly positive were considered to have a hemolytic streptococcus infection and were treated in a manner also outlined in a subsequent paragraph. If symptoms and signs of infection were associated with the change in culture, the infection was designated as being clinical. If the culture change occurred without associated symptoms and signs, the infection was called subclinical. Patients having or suspected of having hemolytic streptococcus infections of the respiratory tract were transferred to the isolation wing of the hospital until their cultures again became negative.

TABLE 1.—*Penicillin Sensitivity of 34 Strains of Hemolytic Streptococci*

Penicillin Sensitivity *	Number of Strains
0.006	1
0.008	5
0 01	8
0.02	15
0.03	3
0 04	1
5.0-.0.0	1

* Sensitivity is defined as the number of units of penicillin per cubic centimeter of broth which prevents multiplication of the organisms.

Patients in whom positive cultures continued during or reappeared after penicillin therapy were designated persistent or recurrent carriers.

Penicillin was usually administered by mouth in the form of 50,000 or 100,000 unit buffered tablets[4] and was always given at least one hour before meals and two to four hours after meals. Patients receiving penicillin were not allowed to have food between meals.

Hemolytic streptococcus carriers were usually treated with either 100,000 units of penicillin three times daily (total of 300,000 units per day) or with 200,000 units three times daily (total of 600,000 units per day). In several instances carriers were given 200,000 units five times daily (total of 1,000,000 units per day). A few

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From the House of the Good Samaritan (The Children's Medical Center), Boston.

Read before the Section on Experimental Medicine and Therapeutics at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

[1] Goerner, J. R.; Massell, B. F., and Jones, T. D.: Use of Penicillin in the Treatment of Carriers of Beta-Hemolytic Streptococci Among Patients with Rheumatic Fever, New England J. Med. 237: 576-580 (Oct. 16) 1947.

[2] Swift, H. F.; Wilson, A. T., and Lancefield, R. C.: Typing Group A Hemolytic Streptococci by M Precipitin Reactions in Capillary Pipettes, J. Exper. Med. 78: 127-133 (Aug.) 1943.

[3] Hodge, B. E., and Swift, H. F [illegible] Hemolytic and Constant Combining Capacity of Streptolysins [illegible] for Antistreptolysins, J. Exper. Med. 58: 27[illegible]

[4] The oral preparation of penicillin used in this study was supplied by Dr. Elmer Sevringhaus and Dr. William T. Strauss of Hoffmann-LaRoche, Inc.

patients at the beginning of the study were given the antibiotic for fourteen days, but in most instances therapy was continued for exactly ten days.

Patients with hemolytic streptococcus infections (clinical or subclinical) were treated with 200,000 units of penicillin five times daily (total of 1,000,000 units per day) for ten days. The first dose each day was given about 6 a. m. and the last dose about 11 p. m. or midnight.

When frequent throat cultures remained consistently negative for hemolytic streptococci during a three week period following the discontinuation of penicillin, therapy was considered to have eradicated the organisms completely from the throat.

From patients who experienced fever, with or without symptoms or signs of pharyngitis or tonsillitis, cultures were made several times or more over a period of a few hours, and they were then treated orally with penicillin in the manner already described for hemolytic streptococcus infections. If subsequent evaluation of the culture results indicated that the infection was nonstreptococcic, penicillin therapy was discontinued; if, however, it became apparent that the infection was due to the hemolytic streptococcus, therapy was continued for a total of ten days. In this way it was often possible to treat hemolytic streptococcus infections within twenty-four hours of their onset.

In an attempt to reduce further the spread of hemolytic streptococcus infection, cultures from all physicians, nurses and other personnel who came in contact with the patients were secured at fairly frequent intervals, and those found to be harboring hemolytic streptococci in their throats were treated orally with penicillin. In many instances there was reason to believe that the outlined plan of therapy was not adhered to closely, and for this reason observations on this group were not satisfactory and have not been included in this report.

RESULTS

1. *Effect of Orally Administered Penicillin on the Carriage of Hemolytic Streptococci.*—Observations concerning the effect of orally administered penicillin on the presence of hemolytic streptococci in the throat were made on a total of 37 patients. Of these 21 were classified as carriers, 9 as having clinical hemolytic streptococcus infection and 7 as having subclinical hemolytic streptococcus infection.

Table 2.—*Cultures Positive for Hemolytic Streptococci Prior to and During Oral Penicillin Therapy**

	Total Cultures	Positive for Hemolytic Streptococci	
		Number	Percentage
Prior to therapy	229	183	80
During first 24 hours	33	8	24.2
During second 24 hours	34	2	5.9
Between third and last day	235	5	2.1

* Exclusive of non-group-A strain with penicillin sensitivity of 5 to 10 units.

The organisms obtained from 3 patients grew so poorly, when transferred from the original blood agar throat culture plates, that they could not be isolated, and hence, in these instances, data regarding penicillin sensitivity, serologic grouping and serologic typing could not be obtained. The penicillin sensitivities of the isolated strains in the remaining 34 cases are recorded in table 1. The sensitivities of all strains fell within the range of 0.006 and 0.04 unit except that of one non-group-A strain which had a sensitivity of between 5 and 10 units. All of the isolated strains were found to be group A except for the penicillin-resistant strain and one other strain which had a sensitivity of 0.02 unit.

In table 2 there are presented data concerning the proportion of all throat cultures found to be positive for hemolytic streptococci prior to penicillin therapy, during the first day of therapy, during the second day of therapy and during the period between the third and the last day of therapy. The table is a summary of the results of throat cultures on all patients exclusive of the one found to be harboring the resistant non-group-A strain of hemolytic streptococcus and has been compiled without consideration of variation in penicillin dosage. It is evident that prior to treatment with penicillin, 80 per cent of 229 throat cultures obtained from 36 patients revealed the presence of hemolytic streptococci. Within twenty-four hours after treatment with penicillin was begun the incidence of positive cultures dropped to 24.2 per cent; within the next twenty-four hours to 5.9 per cent, and during the remaining period of therapy to 2.1 per cent.

Table 3.—*Patients with Positive Cultures Prior to, During and After Oral Penicillin Therapy**

	Number of Patients
Prior to therapy	36
During period between third and last day of therapy	4
During a three week period following discontinuation of therapy	8

* Exclusive of 1 patient harboring a non-group-A strain with a penicillin sensitivity of 5 to 10 units.

Table 3 presents the same data used in table 2 but has been compiled in terms of total patients and also includes information concerning the throat culture findings during the three week period following discontinuation of penicillin therapy. It is evident that permanent clearing of hemolytic streptococci from the throat was effected in 28 patients, or 77.7 per cent, while failure to bring about permanent eradication of the organisms occurred in 8 patients, or 22.3 per cent.

It is of interest that of the 4 patients who showed one or more positive cultures during the period between the third and the last day of treatment, only 2 were among those who had positive cultures after therapy. Thus in 6 patients, even though the hemolytic streptococci were suppressed during therapy sufficiently to produce negative cultures, the organisms reappeared in the throat after penicillin was discontinued. The time after therapy at which positive cultures were first detected in these 6 patients was as follows: first day in 1 patient, fourth day in 2 patients, sixth day in 2 patients and twelfth day in 1 patient.

The question arises whether the organisms isolated after the discontinuation of therapy were the same as those present prior to the administration of penicillin or whether they were due to reinfection with a new strain. In 2 instances, by serologic typing the strains before and after treatment were identified as being the same. In one of these patients the streptococcus was of type 3 and in the other it was of type 28. In the remaining cases the strains before and after treatment could not be typed with the available serums, and hence they could not be identified.

Relation of Results to Penicillin Dosage and Age of the Patient: The age of the 28 patients whose throat cultures were successfully cleared of streptococci ranged from 3 to 17 years and averaged 8.9 years, while that of the 8 patients in whom permanent eradication of the organisms failed ranged from 4 to 17 years and averaged 12 years. Data relating results of therapy to the daily dose of penicillin are presented in table 4. From the information in this table and from the age data it can be calculated that the daily dose of penicillin per year of age for the successfully treated patients averaged 83,100 units, while that for the unsuccessfully treated patients averaged 59,300 units. These figures seem to suggest that the somewhat larger oral doses of penicillin were more effective than the smaller doses in eradicating hemolytic streptococci from the throat, but actually the relatively small number of patients involved in this study precludes attaching any great significance to the apparent differences.

Table 4.—*Relation of Results of Therapy to Daily Dose of Oral Penicillin*

Penicillin Dosage Units per Day	Number of Patients Treated	Patients with Positive Cultures After Therapy	
		Number	Percentage
800,000	8	1	12.5
600,000	10	4	40.0
1,000,000	18	3	16.7
Total	36	8	22.2

Relation of Results to Serologic Group and Type: As previously stated, the hemolytic streptococcus isolated from the throat of 1 patient classified as a carrier was found to be a non-group-A organism with a penicillin sensitivity of between 5 and 10 units. In this patient, whose data have been excluded from most of the tables, it was not surprising to find that the organism persisted in the throat even during the period that penicillin was being administered orally in a dosage of 1,000,000 units per day. In one other patient there was likewise isolated a non-group-A strain which, however, had a sensitivity of only 0.02 unit. This organism, which disappeared from the throat during oral therapy with 1,000,000 units of penicillin per day, was among the 8 instances in which streptococci reappeared after the discontinuation of treatment. In 3 patients, as has also been previously stated, it was not possible to isolate the hemolytic streptococcus for further study. All the hemolytic streptococci cultured from the remaining 32 patients belonged to group A.

Of the 32 isolated group A strains, only 10 could be typed, whereas 22 could not be typed with the available precipitin serums. The serologic group, type and penicillin sensitivity of the 25 strains permanently eradicated by penicillin therapy are summarized in table 5; comparable data for the strains which reappeared after discontinuation of treatment, exclusive of the single non-group-A strain, are given in table 6. Although the small number of cases precludes the drawing of statistically significant conclusions, the data suggest that the effectiveness of therapy does not bear any relation to serologic type or to penicillin sensitivity within the range of 0.006 and 0.04 unit.

Relation of Results to Presence of Tonsils: Tonsillectomy had been performed some time prior to this study on 12 of the 36 patients whose data have been used for table 3, but tonsils were still present in the remaining 24. Among the 24 individuals with tonsils, hemolytic streptococci persisted or reappeared after the discontinuation of penicillin in 7 (29 per cent); among the 12 patients without tonsils, failure to eradicate completely the organism occurred in only 1 (8.3 per cent). These data suggest that when tonsils are present it may be more difficult to clear the throat completely of hemolytic streptococci with oral penicillin than when tonsils are absent.

Comparison of Effectiveness of Orally Administered and Intramuscularly Administered Penicillin: In the initial study already referred to, observations were made on the effect of intramuscularly administered penicillin on the presence of hemolytic streptococci in throat cultures. For comparison of the effectiveness of intramuscularly administered and orally administered penicillin, observations have been restricted to patients from whose throats there were isolated organisms which were group A and which had a penicillin sensitivity within the range of 0.006 and 0.4 unit. Data falling into this category are available on a total of 16 intramuscularly treated patient and 32 orally treated patients. In most instances the intramuscular penicillin was given in 10,000 unit doses every two hours, totaling 120,000 units per day for a ten day period. The dosage schedule for the orally administered penicillin has already been described.

Among the 16 patients treated intramuscularly with penicillin permanent eradication of hemolytic streptococci was accomplished in 15, or 94 per cent; among the 32 orally treated patients, hemolytic streptococci were effectively removed from the throats in 25, or 78.1 per cent. These figures suggest that, with the doses used, orally administered penicillin is not quite so effective as intramuscular penicillin for the romoval of hemolytic streptococci from the throat, but, as in the case of other factors already evaluated, the number of patients involved is too small and the number of other variables too great for the drawing of statistically significant conclusions. In this connection it should be pointed out that in 2 patients in whom orally administered penicillin failed to eliminate hemolytic streptococci a second ten day course of treatment with intramuscular penicillin (150,000 units per day in one and 200,000 units per day in the other) also failed.

Table 5.—*Serologic Group, Type and Penicillin Sensitivity of 25 Strains of Streptococci Completely Eradicated by Oral Penicillin*

Penicillin Sensitivity	Group A Strains,* Types †								Total
	X †	1	3	5	19	22	28	30	
0.006	..	..	..	..	..	..	..	..	..
0.008	1‡	1	..	..	..	..	..	2	4
0.01	3	1	..	..	1	1	..	..	6
0.02	11	..	..	..	1	..	..	..	12
0.03	1	..	..	1	..	..	..	..	2
0.04	1	..	..	..	..	..	..	..	1
Total	17	2	..	1	2	1	..	2	25

* There were no non-group-A strains.
† X is used to designate group A strains which could not be typed with the available serums.
‡ Figures in the body of the table indicate number of strains.

Penicillin Resistance: Penicillin sensitivity was determined for 5 of the strains which recurred following the discontinuation of oral therapy. The data in table 7, which shows the sensitivities of these 5 strains before and after treatment, indicate that no detectable increase in resistance occurred as the result of exposure of the organisms to penicillin for ten days.

Response to Second Course of Therapy: Six of the patients in whose throats hemolytic streptococci persisted or reappeared after discontinuation of a ten day course of oral penicillin were treated again. In 3 the second course was successful, and in 3 it was unsuccessful. One patient treated originally with 300,000 units per day and another treated with 600,000 units per day were completely cleared of hemolytic streptococci by a second oral course of 1,000,000 units per day. A third patient originally treated with 1,000,000 units per day also responded to a second course of 1,000,000 units per day. A second course of 1,000,000 units orally per day in one instance and 150,000 units intramuscularly per day in another instance failed to eradicate the streptococci from the throats of 2 patients originally treated orally with 600,000 units per day. Finally in a patient originally treated with 1,000,000 units per day by mouth a second course of 200,000 units intramuscularly also failed.

Table 6.—*Serologic Group, Type and Penicillin Sensitivity of 8 Strains of Streptococci Which Could Not Be Completely Eradicated by Oral Penicillin*

Penicillin Sensitivity	Non-Group-A Strains	Group A Strains, Types								Total
		X*	1	3	5	10	22	28	30	
0.006	..	1†	..	..	..	..	..	..	..	1
0.005	..	..	..	..	..	..	..	1	..	1
0.01	..	1	..	1	..	..	..	..	..	2
0.02	1	2	..	..	..	..	..	..	..	3
0.03	..	1	..	..	..	..	..	..	..	1
0.04	..	..	..	..	..	..	..	..	..	..
Total	1	5	..	1	..	..	..	1	..	8

* X is used to designate group A strains which could not be typed with available serums.
† Figures in the body of the table indicate number of strains.

2. *Effect on Incidence of Streptococcic Infection.*—Since November 1945 penicillin has been given intramuscularly or orally to all patients on the wards of the House of the Good Samaritan found to be carrying hemolytic streptococci in their throats and to all patients contracting hemolytic streptococcus infection. Because of this treatment the average streptococcus carrier rate among the patients has been considerably reduced. It is our impression that since the institution of this routine procedure the general incidence of hemolytic streptococcus infection has also decreased in comparison with the incidence during previous years, but the number of patients observed has been too small and the period of observation (November 1945 to June 1947) has been too short to determine accurately whether our impression is correct. In spite of the lack of sufficient data for statistically accurate conclusions, certain facts seem to be clear; namely: (*a*) Hemolytic streptococcus infections were not eliminated entirely and continued to occur sporadically and in small outbreaks. (*b*) During outbreaks the prompt isolation and penicillin treatment of patients with hemolytic streptococcus infection did not completely prevent the development of new cases. (*c*) The eradication of hemolytic streptococcus carriers among patients did not completely abolish all sources of infection. Although personnel occasionally were suspected of having introduced hemolytic streptococcus infection into the hospital, patients' visitors seemed to be a likely source of infection and one which was difficult to control.

When there has been an opportunity to accumulate further observations on the occurrence of streptococcus infections among the ward patients at the House of the Good Samaritan, it will be of interest to compare the seasonal incidence of these infections with that which occurred prior to the routine use of penicillin beginning in November 1945.

3. *Practical Use of Penicillin as a Prophylactic Agent.*—The data presented in table 3 indicate that hemolytic streptococci can be completely cleared from the throat by oral administration of penicillin in about three fourths of patients found to be harboring the organisms. Even in those patients in whom the streptococci are not permanently eradicated, the organisms are greatly suppressed, so that cultures usually fail to reveal their presence during the period that penicillin is being administered (table 2). Even doses of 100,000 units or 200,000 units given as infrequently as three times daily seem to be rather effective in this respect.

It seems reasonable to infer that a procedure which will greatly check or eradicate hemolytic streptococci which already have gained a foothold in the pharyngeal mucosa will also prevent the implantation of new strains which have not yet obtained such a foothold but to which the patient may be exposed. If this inference is correct, one would expect that penicillin administered orally in doses of 100,000 to 200,000 units, three times daily, might be effective as a prophylactic agent against the development of hemolytic streptococcus infections and hence might be effective in preventing recurrences of rheumatic fever.

An opportunity to test this hypothesis in a somewhat limited way occurred when a small outbreak of hemolytic streptococcus infections developed among the patients at the House of the Good Samaritan in December 1946. In spite of the prompt isolation and prompt treatment of each patient with penicillin as soon as illness was detected, 8 cases of pharyngitis or tonsillitis due to hemolytic streptococcus occurred in rapid succession within the seven day period from December 10 to December 17. In an attempt to stop the spread of infection, all visitors were barred from the hospital, no new patients were admitted for about two weeks and, starting on December 18, 100,000 units of penicillin were given orally three times daily to all the 45 patients on the wards of the hospital and continued for ten full days (December 18 to December 28). During this entire period of prophylactic oral administration of penicillin no new cases of infection occurred, and daily throat cultures on all patients were consistently negative for hemolytic streptococci, except in 1 patient. This 1 exceptional patient had been carrying in her throat for several months a non-group-A streptococcus which was relatively resistant to penicillin (sensitivity of 0.10 unit) and which had failed to disappear in a previous attempt to eradicate it with intramuscular administration of penicillin. This patient continued to harbor the same organism during and after the prophylactic regimen.

Table 7.—*Penicillin Sensitivity Before and After Penicillin Therapy of 5 Strains of Streptococci Which Could Not Be Completely Eradicated*

Penicillin Sensitivity Before Therapy	Penicillin Sensitivity After Therapy
0.008	0.008
0.01	0.02
0.02	0.01
0.02	0.02
0.02	0.02

After discontinuation of the mass oral administration of penicillin no further clinical streptococcic infections occurred over a period of four months, though 7 instances of sporadic mild subclinical infection did occur on the following dates: January 1, January 5, February 16, March 13, April 7, April 24 and April 28, 1947.

Because none of the organisms isolated between Dec. 10, 1946 and April 28, 1947 could be typed with available precipitin serum, it unfortunately was not possible to trace the original source of the outbreak or to determine whether all infections were caused by a single strain of group A streptococcus.

Although the observations reported here are too limited for irrefutable conclusions, they strongly suggest that the administration of as little as 100,000 units of penicillin by mouth three times daily is an effective method of preventing the spread of hemolytic streptococcus infections. Other factors which, of course, may also have influenced the abrupt cessation of new cases of infection were the barring of visitors and the stopping of new admissions.

4. *The Effect of Prompt Penicillin Treatment of Hemolytic Streptococcus Infections on the Immune Response and on Recurrences of Rheumatic Fever.*—Our previously reported study on intramuscular administration of penicillin included 2 cases of clinical infection with group A streptococcus treated with 10,000 units of penicillin intramuscularly every two hours (120,000 units daily) for ten days. In the present study we have treated 8 additional clinical infections with group A hemolytic streptococcus and 5 subclinical infections with group A hemolytic streptococcus with 1,000,000 units of oral penicillin daily for ten days. It is of interest that none of the infections of the respiratory tract were followed by recurrences of rheumatic fever even though it is general experience that among subjects with rheumatic fever recurrences of the disease follow infections with hemolytic streptococcus in about 50 per cent of instances.[5]

Also of interest is the response of the antistreptolysin titer following streptococcus infection. None of the patients with subclinical infection showed a rise in titer. Among the 10 patients with clinical streptococcus infection a significant rise in titer (two tubes or more) occurred in 3 and no rise, or at the most a one tube rise, occurred in 7.

COMMENT AND CONCLUSIONS

These observations indicate that when hemolytic streptococci are present in the throat they are almost completely suppressed during the oral administration of penicillin in daily doses of 300,000 to 1,000,000 units per day and that they can be completely eradicated in about 75 per cent of patients provided that the penicillin sensitivities of the organism lie within the usual range of 0.006 and 0.04 unit.

With the data available to us the reason for failure to effect complete eradication in about one quarter of the patients could not be entirely explained on the bases of the patients' ages, penicillin dosages, variations in penicillin sensitivity of the organisms within the range of 0.006 and 0.04 unit, or serologic type of the bacterial strains. Although observations on blood levels of penicillin have not been included in this study, failure of absorption of the orally ingested penicillin would not seem to explain the persistence of hemolytic streptococci in the throat in all instances; for in 2 patients in whom orally administered penicillin had failed, a second course of intramuscularly administered penicillin likewise failed to eradicate the organisms. The presence of tonsils may be one of the factors which prevent penicillin therapy from being effective in some cases. Many more observations will be necessary in order to determine with statistical accuracy the role which these various factors may play in the results of treatment.

It is evident that reduction in the hemolytic streptococcus carrier rate by penicillin therapy and prompt treatment of hemolytic streptococcus infections with penicillin do not completely prevent the occurrence of new hemolytic streptococcus infections among ward patients. Although it is our impression that these procedures lower the incidence of such infections, further observations will be required to determine whether these impressions are correct.

The decided suppression of hemolytic streptococci in the throat flora during the administration of 100,000 units or 200,000 units of penicillin only three times a day would seem to indicate that similar doses of the antibiotic would also prevent the implantation of the organisms in the throat and, therefore, that use of penicillin might be practicable in the prevention of hemolytic streptococcus infections and hence in rheumatic fever prophylaxis. Confirmation of this conclusion is suggested by the observation that an outbreak of hemolytic streptococcus infection among ward patients seemed to be checked abruptly by the mass administration of penicillin in doses of 100,000 units three times daily for ten days, although it is possible that the barring of visitors and the discontinuation of new admissions may have also played an important role.

Except for its present high cost, which prevents its extensive use, oral penicillin, as a prophylactic agent, would seem to have considerable advantage over the sulfonamide drugs, which are potentially toxic as well as less effective antistreptococcic agents. Although allergic (serum-sickness-like) reactions occurred in a few of our patients given penicillin orally, they did not constitute an important problem. No other kinds of toxic reactions were observed.

A possible drawback to the oral use of penicillin for rheumatic fever prophylaxis is the danger of producing resistant strains of hemolytic streptococci or of nonhemolytic (viridans) streptococci in instances when therapy fails to eliminate these organisms completely from the throat. The development of penicillin-resistant nonhemolytic streptococci would seem to be especially undesirable because of the possibility that such resistant organisms might subsequently become the cause of bacterial endocarditis that might not be amenable to penicillin therapy. Although reports have appeared which suggest that the risk of developing penicillin-resistant strains is real,[6] these observations were made in patients receiving relatively small oral doses of penicillin (50,000 units twice daily). The need of further studies of this phenomenon in patients receiving penicillin orally in doses of 300,000 units or more per day would seem to be indicated.

Observations of the effect of orally administered penicillin on hemolytic streptococci in the throat flora offer a relatively simple method for determining what dosage schedule of this antibiotic may be most effective, and at the same time practical, for rheumatic fever prophylaxis.

Prior to our use of penicillin, recurrences of rheumatic fever followed hemolytic streptococcus infections among patients at the House of the Good Samaritan in approximately 50 per cent of instances. Therefore, the absence of such recurrences after ten clinical and five subclinical infections with group A hemolytic streptococcus treated promptly with intramuscular penicillin or large doses of the oral preparation has been an unusual experience for us. Our own limited observations, as well as the more extensive observations of others,[7] indicating that prompt penicillin therapy of hemolytic streptococcus infection interferes with the immune response, suggest that such treatment may wipe out the organisms from the throat before their toxins can be produced and disseminated in an appreciable quantity and offer a rational basis for understanding why rheumatic fever recurrences might be prevented.

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[5] It is also general experience that the prompt treatment of hemolytic streptococcus infections with sulfonamide drugs will not reduce the incidence of subsequent recurrences of rheumatic fever.

[6] Kuttner, A. G.: Experience with Oral Penicillin in Rheumatic Fever, read before the New York Rheumatism Association, New York, April 10, 1948. Milzer, A.; Kohn, K. H., and MacLean, H.: Oral Prophylaxis of Rheumatic Fever with Penicillin: Resistant Hemolytic Streptococci, J. A. M. A. **136**: 536-538 (Feb. 21) 1948.

However, in view of the fact that occasional strains of hemolytic streptococci seem unable to produce rheumatic fever,[8] and especially in view of the fact that the strains of hemolytic streptococcus isolated by us in the December 1946 outbreak could not be typed,[9] we are not willing to conclude that failure of rheumatic fever to develop was due to penicillin therapy. These observations, nevertheless, are sufficiently suggestive to indicate the importance of collecting further data.

SUMMARY

Orally administered penicillin in doses of 300,000 to 1,000,000 units per day for ten days suppressed hemolytic streptococci in the throats of all but 2.1 per cent of patients with rheumatic fever during therapy and completely eradicated the organisms in 77.7 per cent.

The reduction in streptococcus carrier rate by penicillin and the prompt treatment of hemolytic streptococcus infections with penicillin did not completely prevent the spread of streptococcus infections among ward patients.

The suppression of hemolytic streptococci in the throat by doses of 100,000 units to 200,000 units of penicillin as infrequently as three times daily offers indirect evidence that a similar dosage schedule of the antibiotic might be practicable for the prevention of hemolytic streptococcus infections and hence for rheumatic fever prophylaxis.

Of ten clinical and five subclinical hemolytic streptococcus infections in patients with rheumatic fever who were promptly treated with penicillin, there were no recurrences of rheumatic fever.

ABSTRACT OF DISCUSSION

Dr. Wesley W. Spink, Minneapolis: It has now been well established that penicillin is the most effective therapeutic agent for infections due to beta hemolytic streptococci. In the treatment of infections of the upper respiratory tract, including scarlet fever, caused by hemolytic streptococci it is necessary to continue the administration of penicillin for at least four or five days, or relapses may occur. Hamburger and his associates have shown that the most dangerous carriers of hemolytic streptococci are persons having the organisms in nasal cultures. Parenteral administration of penicillin for several days will eradicate hemolytic streptococci from the nasopharynx of these persons. Most workers are now agreed that Lancefield group A hemolytic streptococci frequently cause infections of the upper respiratory tract which precipitate initial and recurrent attacks of rheumatic fever. Once the tissues have been invaded by these streptococci, sulfonamide drugs or penicillin will not prevent the subsequent development of rheumatic fever. The objective in prophylaxis is to prevent the streptococci from localizing and multiplying in the tissues. This can be accomplished in children by the daily administration of small doses of a sulfonamide compound. Unfortunately, sulfonamide prophylaxis for streptococcic infections of the upper respiratory tract has resulted in the appearance of sulfonamide-resistant strains of streptococci. Dr. Massell and his group have pointed out that this acquisition of resistant strains has not been observed with small oral doses of penicillin. Obviously, further studies are needed to substantiate this point, but if penicillin does not induce the appearance of resistant strains of streptococci, penicillin should replace the routine use of the sulfonamide compounds. One feature of oral therapy with penicillin that has disturbed me in adults is the severe type of reactions simulating serum sickness that have been observed. These reactions are quite incapacitating and may persist for several days. Dr. Massell stated that in his group such reactions were seen but that they were not serious. In the treatment of carriers of streptococci, Dr. Massell administered penicillin orally three times a day. If a prophylactic program is to be carried out daily all the year round, the program should be inexpensive and efficient. Tablets of penicillin are more expensive than sulfonamide compounds. Prophylactic programs for rheumatic fever have been successful when a sulfonamide tablet has been given twice a day. It is a distinct disadvantage to have to administer a tablet three times a day. Further studies should be carried out to determine whether penicillin is not just as effective when one or, at the most, two doses are given a day.

Dr. Walter Bauer, Boston: I am sure that many of the members of this audience would appreciate it if Dr. Massell would tell us what the ideal prophylactic treatment is for a patient with rheumatic disease. What treatment would he advise to keep to a minimum recurring streptococcic infections and thereby limit rheumatic recurrences?

Dr. Benedict F. Massell, Boston: I would agree with Dr. Spink's statement that penicillin therapy of streptococcic infection should be continued for a sufficiently long period in order to prevent a flare-up of the infection, but in our experience a sufficiently long period would seem to be closer to ten days than to five days. I likewise would agree that Hamburger's observations on the relation of nasal carriage to spread of streptococcic infection indicate a need for studying nose as well as throat cultures in closed populations. In dealing with the problem of spread of infection among patients in a hospital such as the Good Samaritan, attention must be given not only to the patients themselves but also to the hospital personnel and to the patients' visitors. The introduction of infection by visitors is especially difficult to control. As Dr. Spink has pointed out, prompt sulfonamide therapy of streptococcic infections among rheumatic-susceptible subjects will not prevent recurrences of rheumatic fever. But our observations, although in need of considerable extension before being accepted, suggest that perhaps penicillin therapy may be effective. Dr. Spink's own observation, that prompt treatment of streptococcic infection with penicillin interferes with the development of immune bodies, offers a rational basis for believing that penicillin therapy holds some promise as a possible method for reducing the incidence of rheumatic fever. The danger of producing penicillin-resistant bacterial strains by the prolonged prophylactic administration of oral penicillin, as indicated by Dr. Spink's remarks, is important and deserves careful consideration and further study. It is conceivable that hemolytic streptococci, suppressed but not completely eradicated by penicillin given over a period of months, might become resistant to the antibiotic. Such resistant organisms probably would not endanger the person harboring them, but they would constitute a definite danger to other persons, especially persons susceptible to rheumatic fever, to whom they might spread. On the other hand the development of resistant viridans and nonhemolytic streptococci would be a potential risk to the patient himself, for, as pointed out by Dr. Ann Kuttner at a recent meeting of the New York Rheumatism Association, should one of these resistant strains invade the blood stream and lodge on a damaged valve, the resulting bacterial endocarditis might not be amenable to penicillin therapy. Allergic reactions with involvement of the joints and fever occurred infrequently. Their chief importance concerns their possible confusion with recurrences of rheumatic fever. Urticaria, which is associated with penicillin reactions but not with rheumatic fever, is the distinguishing feature.

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[7] Rantz, L. A.; Boisvert, P. J., and Spink, W. W.: Hemolytic Streptococcal Sore Throat: Antibody Response Following Treatment with Penicillin, Sulfadiazine (Sulfonamide) and Salicylates, Science **103**: 352-353 (March 22) 1946. Weinstein, L., and Tsao, C. C. L.: Effect of Types of Treatment on Development of Antistreptolysin in Patients with Scarlet Fever, Proc. Soc. Exper. Biol. & Med. **63**: 449-450 (Nov.) 1946.

[8] Kuttner, A. G., and Krumwiede, E.: Observations on the Effect of Streptococcal Upper Respiratory Infections on Rheumatic Children: A Three-Year Study, J. Clin. Investigation **20**: 273-287 (May) 1941.

[9] Six of the isolated strains were sent to Dr. Rebecca Lancefield of the Rockefeller Hospital who also reported that they could not be typed in her laboratory.

HISTIDINE AND ASCORBIC ACID TREATMENT OF ARTERIOSCLEROSIS OBLITERANS

With Radioactive Isotope Estimations of Circulatory Effects

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A better understanding of the role of the sympathetic nervous system, antisympathetic drugs, antibiotics and refrigeration has converted the emergency amputation to an elective procedure. The surgeon, confronted with a gangrenous extremity, now has several aids that he may use to save the patient's life and to conserve tissue formerly sacrificed. Increasing interest in the conservative management of certain sequelae of vascular disease is evidenced by such recent reports as those of Wirtschafter and Widmann.[1] This report contains our experience with the use of histidine and ascorbic acid in the conservative treatment of one type of peripheral vascular disease as first suggested by Wirtschafter and Widmann.

Holtz[2] advanced the theory that histamine was formed in vitro and in vivo by the action of ascorbic acid with histidine. Block and Pinösch[3] found that there was an increase of histamine in the lungs of guinea pigs following administration of histidine and ascorbic acid. There is not a complete unanimity on these observations. It must be borne in mind that microbiologic surveys are notoriously erratic and determinations of histamine content are difficult. Histidine is an essential amino acid and apparently is unstable.

SELECTION OF PATIENTS

Our study comprises a group of 25 patients with impairment of circulation of the lower extremities because of arteriosclerosis. All had been admitted to the surgical service of the Cook County Hospital for amputation. Patients with uncontrolled diabetes, cardiac decompensation, severe renal disease and other serious complications not related to the diseased extremities were excluded. The patients selected represented a group who failed to respond to other conservative measures, such as sympathetic block, rest in bed and use of ordinary vasodilatants. So far as was feasible, only patients with a preponderance of complaints confined to one extremity were selected.

PHYSICAL EXAMINATION

Among the significant symptoms, we looked for diurnal pain, nocturnal pain, paresthesias and intermittent claudication. These patients spent most of their time with their feet dangling from the bed in an attempt to obtain dependent relief. The peripheral pulsations were always sought for, and none of these patients had pulsations palpable below the popliteal fossa. In only 20 per cent (5) of the patients were popliteal pulsations noted. Other signs recorded were dependent rubor, reactive hyperemia and cellulitis, atrophy of the skin and nails, ulcerations and gangrene.

METHOD OF STUDY

Some of these patients were treated with histidine and ascorbic acid after the technic described by Wirtschafter; others were treated with the oral preparation of histidine. Fresh l-histidine monochloride[4] was made available by the manufacturer in two forms for this trial. A solution in ampules of 5 cc. of 4 per cent strength in water and a capsule of 0.5 Gm. of the substance were provided. Thirteen patients received only oral therapy; 12 patients were given only parenteral therapy. The oral dosage of histidine consisted of 4 capsules three times a day, and 400 mg. of ascorbic acid three times daily at intervals different from those of the histidine. Parenteral therapy consisted of the injection of the contents of 1 ampule every six hours. These patients received 100 mg. of sodium ascorbate subcutaneously with each injection of histidine and 600 mg. of ascorbic acid orally per day. No other therapy was directed to the peripheral disease except for dry dressings where needed. A minimum duration of treatment of ten days was assigned for each patient. Daily recordings of changes in symptoms and signs were made. Skin temperature readings, oscillometric studies and examination for peripheral pulsations were frequently repeated. Radioactive isotopes (P^{32}) were used to determine improvement in circulation. Oscillometric indexes were, therefore, low or nil. In fact, there were *no significant changes in these measurements* in any one patient. Too much importance cannot be attached to this mechanism of investigation. Skin temperature readings ("dermalor") were likewise not informative and are not included in the results. The best criteria for results were clinical.

TABLE 1.—*Patients with Symptoms and Relief from Oral Medication*

Symptoms	Number	Relieved
Diurnal pain	10	4
Nocturnal pain	11	5
Claudication	2	2
Paresthesias	9	5

RESULTS FROM ORAL THERAPY

There were 12 male patients and 1 female patient given oral therapy. They varied in age from 64 to 81 years. The average age was 71.6 years. Two patients had diabetes mellitus controlled by dietary measures. The symptoms manifested in this group of cases are tabulated in table 1, together with the results from oral therapy. The effect on ulceration, reactive hyperemia and cellulitis and gangrene is shown in table 2. Less than half of the patients had good relief from pain. Only 2 patients were ambulatory when

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Supported by a grant from the Biochemical Division, Interchemical Corporation, Union, N. J.

From the Hektoen Institute for Medical Research at the Cook County Hospital and the Department of Surgery, Stritch School of Medicine, Loyola University.

[1] Wirtschafter, Z. T., and Widmann, R.: The Elaboration of Histamine in Vivo in Treatment of Peripheral Vascular Disorders, J. A. M. A. **133**: 604 (March 1) 1947.

[2] Holtz, P.: Histaminbildung aus Histidin durch Ascorbine Säure, Näturwissenschaften **25**: 14, 1937.

[3] Block, W., and Pinösch, H.: Die Umwandling von Histidin in Histamin im tierischen Organismus, Ztschr. f. physiol. Chem. **239**: 236, 1936.

[4] Furnished by the Biochemical Division, Interchemical Corporation, Union, N. J.

treatment was begun, and both of these had claudication. Both claimed relief from histidine therapy and were able to walk better. Occasionally relief from pain was striking and enabled the patients to sleep without narcotics for the first time in weeks. (Many of the patients were definitely senile. Once relieved of pain, they needed considerable prodding to recall their recent bitter complaints. In 1 patient with palpable popliteal pulsation there was definite return of the dorsalis pedis and posterior tibial pulsations. This patient became ambulatory, and we feel that amputation was averted. In the remaining patients the pulsations and oscillometric readings remained unchanged. The effect on gangrene resulted in rapid demarcation in 3 of 8 patients and continued extension in 5 cases. One patient died suddenly four days after onset of treatment in spite of beginning improvement and demarcation of gangrene. This patient was extremely toxic on admission, and medication was discontinued because of obviously imminent demise. None of the patients in the entire series manifested any toxic symptoms from the treatment.

RESULTS WITH PARENTERAL THERAPY

There were 9 men and 3 women in the group receiving parenteral therapy. They varied in age from 50 to 81 years. The average age was 64.4 years. The symptoms manifested in this group of cases and the results from injected histidine are shown in table 3. Results in patients with objective observations of gangrene, reactive hyperemia and cellulitis are shown in table 4. Relief from pain was much more noticeable in this group, although improvement in physical observations was about the same as in the group receiving oral therapy. This suggests that therapy should be started with parenteral medication and that after pain is relieved oral therapy might be sufficient. There were no untoward effects from administration of the drug, and no deaths occurred in this group of patients.

Table 2.—*Results of Oral Therapy in Patients with Objective Findings of Gangrene and Reactive Hyperemia and Cellulitis*

Signs	Number	Results	Remarks
Reactive hyperemia and cellulitis........	11	Relief in 4	
Gangrene............	9	Demarcated — 4	1 death
		Unchanged or extending — 5	3 patients had supracondylar amputations; 1 discharged unchanged; 1 patient refused amputation and subsequently died

Table 3.—*Patients with Symptoms and Relief from Injected Histidine*

Symptoms	Number	Relieved
Diurnal pain..................................	11	9
Nocturnal pain..............................	12	6
Paresthesias..................................	10	9
Claudication..................................	2	2

END RESULTS

As the first four tables reveal, eleven amputations were necessary in the 25 cases. Of these, seven were supracondylar and four were conservative amputations, implying local excision of the gangrenous and sloughing portions of the foot. Supracondylar amputation is the method of choice at Cook County Hospital. At present, there is little indication that below the knee stumps are either safe or practical in the presence of arteriosclerosis. Therefore, unless amputation can be confined to the phalanges and heads of the metatarsals, it is felt that supracondylar amputation is the most practical procedure. In those patients in whom conservative procedures were attempted, open stumps were left which continued to stay clean and healthy and healed by secondary intention long after treatment was stopped.

Table 4.—*Results of Parental Therapy in Patients with Objective Findings of Gangrene, Reactive Hyperemia and Cellulitis*

Signs	Number	Results
Reactive hyperemia and cellulitis......	9	Relief in 4
Gangrene..............................	6	Demarcation 2 Conservative amputation 2 Supracondylar amputation 3

Table 5.—*End Results of Histidine Therapy (25 Cases)*

Discharged as improved............................	6
Supracondylar amputation..........................	7
Conservative amputation...........................	4
Unimproved..	6
Died..	2

Table 6.—*Gangrene and Necrosis (Status and Sites)*

Site	Number	Result
Gangrene of toes only.................	5	Local amputation 4 No amputation 1
Gangrene of foot......................	6	Supracondylar amputation 4 Died 2

Six patients were discharged as improved, and 6 were discharged without demonstrable improvement in objective observations. Some of these had relief of pain, as did some who subsequently underwent amputation. One patient underwent amputation on the sixth day because of obvious extension of the gangrenous process. An extremely ill man, aged 70, died on the fourth day of treatment. One patient died several weeks after treatment; she had refused amputation and further treatment seemed unavailing.

OTHER CONSIDERATIONS

Nutritional factors must be considered in this type of study where an amino acid and a vitamin are the only form of therapy. Serum protein levels were determined on the first and tenth day of treatment in those patients receiving parenteral treatment. Many of these patients were debilitated, but had apparently been on the standard hospital diet for some time and received all the necessary dietary essentials. Thus, in the second group of patients, serum protein levels of over 7 Gm. per hundred cubic centimeters were found in 3 patients, from 6.5 to 7 Gm. in 7 patients and below 6.5 Gm. in 2 patients. The lowest reading was 5.9 Gm. per hundred cubic centimeters. This latter reading was of a patient who had undergone amputation on the sixth day of treatment. Nutritional factors are, beyond a doubt, of extreme importance, but their relationship to the peripheral vascular factor is obscure. After ten days of parenteral therapy there was little change in the serum protein levels and no correlation to the end results.

ISOTOPE STUDIES

A sterile 10 cc. solution of disodium phosphate ($Na_2H_2PO_4$) containing 200 microcuries of radioactive phosphorus (P^{32}) was injected into the cubital vein of patients. A Geiger-Müller probe was applied to the sole of the foot, and the minute by minute increase in count was recorded by a scaling unit. A similar procedure had been carried out on approximately 150 patients without any demonstrable ill effects. The radioactive phosphorus is retained in the body for several weeks and is apparently distributed freely throughout the body. The total dosage from the quantity of radioactivity to which the body is exposed is negligible. Smith and Quimby[5] have reported similar studies with radioactive sodium. We used radioactive sodium in a few patients. The results were similar to those with phosphorus, and we feel that the latter is more desirable from the point of view of safety and availability. We have observed that the number of counts obtained from the extremity ceases to increase about thirty minutes after injection of the radioactive substance. For statistical purposes 1,200 counts are deemed sufficient to eliminate significant errors. Therefore, prior to beginning treatment we injected into some of these patients a measured dose (200 microcuries) of P^{32} and compared the time differences to obtain 1,280 (20 by 64) counts from similar areas on the sole of each foot. This was done in 11 of the patients who underwent parenteral therapy (the twelfth had had a previous amputation). After ten days of treatment an additional 200 microcuries was injected and the extremities recompared. It was felt that some actual indication of alteration in circulation of the two extremities could be demonstrated. We have observed that often in arteriosclerotic disease there is a greater rate of deposition of P^{32} in the tissues than in the normal condition. If this rate can be reduced it may indicate that circulation has been restored to a closer to normal state. The increase in concentration of P^{32} in arteriosclerosis we attribute to capillary stasis. A comprehensive analysis of P^{32} studies in circulatory disease is now in preparation.

TABLE 7.—*Summary of Observations in 11 Cases*

			Seconds per 20 Counts (Scale of 64)						
			Before		After				
Case No.	Age	Sex	Affected Side	Nonaffected Side	Affected Side	Nonaffected Side	Gangrene	Cellulitis	Disposition
1	56	F	61.4	80.4	31.4	34.8	None	None	Not improved; pain continues; moderate night pain
2	62	F	43.8	52.0	39.6	38.4	None	Present	Discharged as improved
3	75	M	26.0	40.2	20.0	30.0	None	Present	Discharged as improved
4	65	M	56.8	79.1	38.5	38.1	None	None	Objectively not improved; pain relieved
5	69	M	30.0	72.2	17.4	40.0	Toe III	Present	Pain relieved; discharged without operation
6	71	M	34.0	44.4	29.2	32.8	T II and T IV	Present	Conservative amputation, improved
7	57	M	38.6	39.8	23.4	30.8	None	None	Discharged as improved
8	50	F	93.4	61.0	57.2 ?	52.2 ?	None	None	Discharged as improved
9	65	M	87.2	63.8	74.0	42.8	Foot	Present	Improved; conservative amputation; some night pain
10	68	M	520.0	136.0	....	....	Extensive	Present	Supracondylar amputation
11	81	M	430.0	63.6	....	....	Extensive	Present	Supracondylar amputation sixth day

The results, while not altogether conclusive, are demonstrated in tables 7 and 8. It must be remembered that a measurable amount of radioactivity persists for more than ten days when P^{32} (half life of 14.3 days) is used. Therefore, before and after readings quantitative comparisons cannot be made, but only the relative concentrations in both extremities can be assessed simultaneously. Cases 1 to 6 in table 7 reveal that the affected side had a greater concentration of radioactivity than the nonaffected side prior to the institution of therapy. In the table this is recorded as a shorter time (in seconds) necessary to receive 1,280 pulses from the Geiger-Müller tube applied to the sole of the foot of the affected side than from the nonaffected side. After ten days of parenteral treatment with histidine and ascorbic acid it is shown that concentration of newly injected P^{32} was equal in both extremities in 4 patients and significantly higher in the affected side in only 2 persons. In this group of 6 patients, 5 were discharged without surgical treatment and 1 had a conservative amputation.

Case 7 in table 7 reveals equal concentration of radioactivity in both lower extremities (soles of feet) with an increase in concentration following treatment on the affected side. This patient also had a good result.

Cases 8, 9, 10 and 11 revealed a lower concentration of radioactivity on the affected side. Three of the patients had extensive gangrene, 2 requiring supracondylar amputation. One patient was able to undergo conservative operation after treatment, and we feel that this was attributable to the use of histidine and ascorbic acid. In this group 1 patient (case 8) had a definite trend to equalization of circulation, and she was discharged without surgical treatment. (Table 8 summarizes results of P^{32} studies.)

TABLE 8.—*Observations of Radioactivity*

	Before Treatment	Results After Treatment (10 Days)
Radioactivity greater on affected side..	6	1 conservative amputation
Radioactivity equal in both feet........	1	Good
Radioactivity less on affected side....	4	3 amputations

SUMMARY

Twenty-five patients were treated with histidine and ascorbic acid. These patients had been admitted either with gangrenous changes in the lower extremities or with symptoms and signs indicating imminent gangrene. All were admitted to the surgical services as candidates for amputation, with a diagnosis of arteriosclerosis obliterans. For purposes of comparison patients were selected with the majority of symptoms and signs in one lower extremity. The results are summarized in tables 1 through 6. In addition to standard clinical and laboratory evaluation, 11 of the 12 patients treated parenterally were subjected to critical studies of circulation with radioactive phosphorus as an indicator. The observations are listed in tables 7 and 8.

---

[5] Smith, B. S., and Quimby, E. H.: The Use of Radioactive Sodium as a Tracer in the Study of Peripheral Vascular Disease, Radiology **45**: 335, 1945.

CONCLUSION

1. Parenteral administration of histidine and ascorbic acid relieves pain of arteriosclerosis obliterans in a majority of cases. From this point of view it is superior to oral administration.
2. Parenteral or oral administration of histidine and ascorbic acid will improve the objective signs of arteriosclerosis obliterans in selected cases. The two routes appear to be equally effective in this regard.
3. Histidine and ascorbic acid may hasten demarcation of gangrene but will not restore gangrenous tissue to viability.
4. Studies of circulation with radioactive phosphorus in these cases indicate that histidine and ascorbic acid may equalize the circulation in the extremities and return the circulatory function toward a normal state. It is also shown that in nongangrenous phases of arteriosclerosis obliterans relative hyperemia (capillary stasis) of the affected extremity exists. Histidine and ascorbic acid have a beneficial effect in some cases, as shown by equalization of the rate of deposition of P^{32} in both extremities.
5. When concentration of radioactive phosphorus in the affected extremity is relatively poor, conservative measures are useless. A rational method of treatment of arteriosclerosis obliterans is suggested with initial therapy consisting of parenterally administered histidine and ascorbic acid until relief of pain is obtained, with subsequent maintenance of orally administered histidine and ascorbic acid.
7. Conservative amputation may be attempted in adequately treated patients with satisfactory results. Supracondylar amputation is preferred when more than the heads of the metatarsals are to be sacrificed.

Clinical Notes, Suggestions and New Instruments

FLUORESCEIN: AN ADJUNCT IN SURGERY OF EXTRAHEPATIC BILIARY PASSAGES

A Preliminary Report

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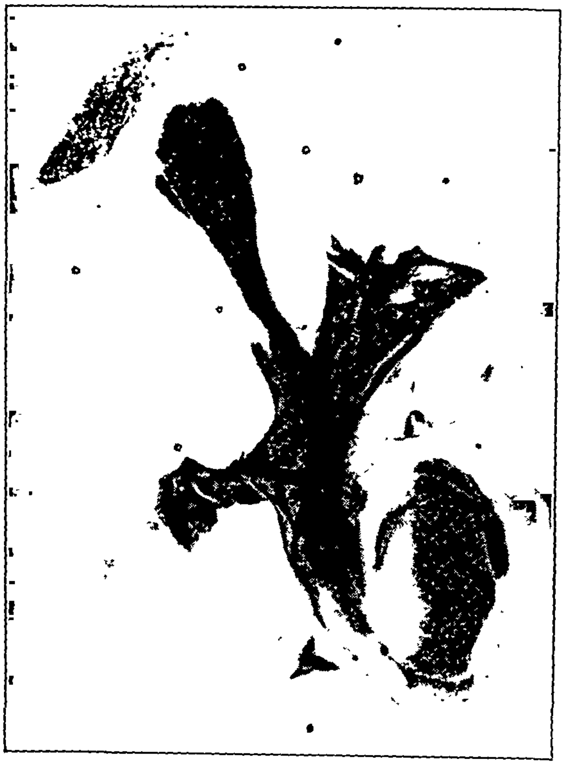
In surgical treatment of the biliary tract the surgeon is often faced with three major problems: first, anatomic anomalies which occur rather frequently in this system, affecting particularly the cystic duct; second, distortion of the external biliary passages by inflammatory processes and adhesions, causing poor visualization of the ducts, and, finally, the absence or atresia of the extrahepatic biliary ducts, which is most difficult and presents the most distressing problem of all.

Immediate cholangiography and dissection are the only aids which the surgeon possesses in the operating room. Dissection may be unsuccessful and dangerous, while cholangiography requires special equipment, is time consuming and is often of little assistance because of the difficulty in application and lack of information as to the third dimension.

We believe that we have found a method which obviates these difficulties and have established a procedure which may be an invaluable adjunct in this type of surgical procedure.

We have been able to demonstrate clinically and experimentally that fluorescein is excreted and concentrated in the bile to such an extent that under ultraviolet rays the hepatic and extrahepatic bile ducts appear in striking and contrasting yellow. Also, on section of the liver, large bile channels can be seen. These, we believe, can be cannulated, and this may prove to be the method of choice in surgical treatment for agenesis or stricture of the bile ducts. The timing of injection and observations is important and has been experimentally and clinically established. Chemical studies confirm the extreme usefulness of the concentrating power of the liver with respect to fluorescein. The phenomenon of concentration in the bile is illustrated in the accompanying photograph. The solution used is 5 per cent solution of fluorescein in 5 per cent sodium bicarbonate. Various dosages are being experimented with, and quantitative determinations are being made on liver bile in both dogs and human beings. We have been able to visualize clearly the biliary passages in human beings in the operating room.

The use of fluorescein diluted by the blood stream has been described by Lange[1] and his associates, and Crismon[2] in a series of articles published since 1942. However, its application due to its concentration in bile has not been described. In the Department of Surgery and Gastrointestinal Research of the Medical Research Institute of Michael Reese Hospital it has also been shown by urologists[3] that it may be possible to use fluorescein for visualization of the ureter in view of the fact that fluorescein is also excreted in the urine.



Liver and extrahepatic bile passages visualized after fluorescein injection, showing also open cut section of the liver.

It is our impression that on completion of this work we will have a valuable adjunct in surgical treatment of the biliary system and possibly also the ureters, a procedure which is innocuous and simple in application.

From the Department of Surgery and Gastrointestinal Research of the Medical Research Institute of Michael Reese Hospital, Chicago.

1. Lange, K., and Boyd, L. J.: The Use of Fluorescein to Determine the Adequacy of the Circulation, M. Clin. North America **26**: 934, 1942; The Technique of the Fluorescein Test to Determine the Adequacy of Circulation in Peripheral Vascular Diseases, the Circulation Time and Capillary Permeability, Bull. New York M. Coll., Flower & Fifth Ave. Hosps. **6**: 78, 1943.

2. Crismon, J. M., and Fuhrman, F. A.: Studies on Gangrene Following Cold Injury: IV. The Use of Fluorescein as an Indicator of Local Blood Flow: Distribution of Fluorescein in Body Fluids After Intravenous Injection, J. Clin. Investigation **26**: 259, 1947.

3. Rolnick, H., and Presman, D.: Unpublished data.

COMPLETE HEART BLOCK IN PREGNANCY

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Complete heart block is one of the least frequent observations in all patients with cardiovascular disease. Since its commonest cause is arteriosclerosis most patients with this condition are beyond the childbearing period. The combination of complete heart block and pregnancy is, therefore, rather rare. Diddle[1] reviewed the literature to 1941 and could find only 21 authenticated cases. To these he added his own. Since then there have been reports by Yepez,[2] Quentin,[3] Mitchell and his co-workers[4] and Barton and LaDue,[5] making, with this presentation, a total of 27 patients in whom pregnancy has been complicated by this serious disturbance of cardiac rhythm. This is the first such case observed in this hospital in 15,708 deliveries over a ten year period.

REPORT OF A CASE

The patient, Mrs. E. F. H., a 34 year old white woman, was first seen by us on March 16, 1946, then in the seventh month of her second pregnancy. A prior pregnancy, in 1945, had terminated with a spontaneous miscarriage at three months. She had been under the care of an internist since the third month of this pregnancy; he had made a diagnosis of double mitral disease of rheumatic origin and aside from a palpable liver had noted no signs of decompensation. He did, however, express the belief that there had been some progressive cardiac enlargement during his period of observation and just prior to the long train trip to this city, had digitalized her and placed her on a maintenance dosage of digitalis. The electrocardiogram taken by him on November 9 is shown in figure 1. Because of the electrocardiographic pattern he thought that in addition to her mitral disease she also had an interventricular septal defect.

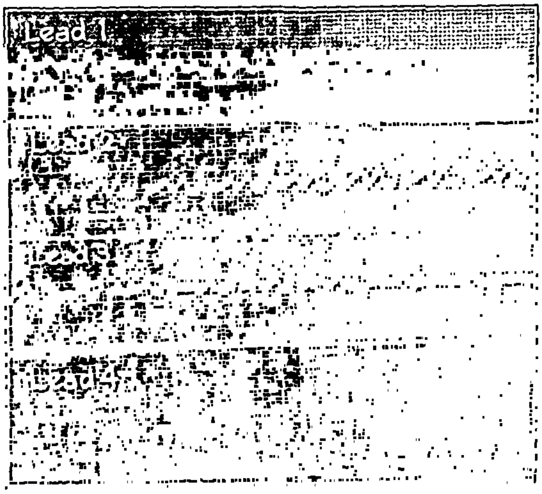

Fig. 1.—Electrocardiogram of Nov. 9, 1946—rate 100 per minute; normal sinus rhythm; PR 0.22 of a second; QRS 0.12 of a second; QRS notched and slurred in all leads. Interpretation: first degree heart block and interventricular conduction defect.

Her past history revealed that she was known to have had a cardiac disease since she was 12 years old, because of which she had avoided any strenuous exertion for many years. There was no history of rheumatic fever. She had been warned against pregnancy but was adamant in her intent to have a baby.

Physical examination revealed no evidence of any distress. Slight dyspnea on exertion was, she stated, no greater than that she had experienced for several years. There was no increase in venous pressure. There were no abnormal pulmonary observations. The heart was moderately enlarged, the point of maximal impulse being in the sixth interspace just outside the midclavicular line. There was also some increase in percussion dulness to the left in the third and fourth interspaces. The rate was 84, and the rhythm was regular. Murmurs at the apex were typical of rheumatic mitral stenosis and insufficiency. A rougher systolic murmur was heard loudest in the fourth and fifth left interspaces adjoining the sternum. The second pulmonic sound was decidedly accentuated and split. Blood pressure was 124 systolic and 80 diastolic. A sharp soft nontender liver edge was just palpable.

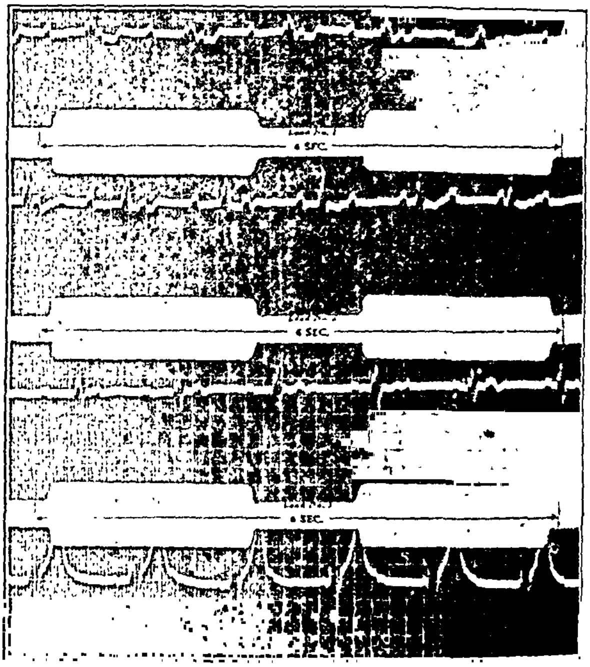

Fig. 2.—Electrocardiogram of March 26, 1946—auricular rate 110; ventricular rate 55; QRS 0.12 of a second. Interpretation: complete heart block; interventricular conduction defect.

On March 26, she returned complaining of fatigue and palpitation, which she stated had been present for the past forty-eight hours. During this period she had without instruction increased the dosage of digitalis from 1½ to 4½ grains (0.1 to 0.29 Gm.) a day. The cardiac rate was noted to be apparently regular at 58. The first sound at the apex and base were explosive in character, followed immediately by a long systolic murmur. The diastolic murmur was still present at the apex. Blood pressure was 120 systolic and 76 diastolic. An electrocardiogram (fig. 2) showed complete heart block, with ventricular complexes that were almost identical with those of the tracing taken November 9. Because of the possibility of a transient complete block having resulted from overdose of digitalis, the use of this drug was discontinued and she was advised to remain in bed. Except for minor complaints which were attributed to anxiety, she had no further symptoms during the remainder of her pregnancy. Bed rest was, however, continued, and no further digitalis therapy was considered necessary. Her heart rate continued at from 48 to 52, and the blood pressure and physical observations were essentially unchanged. An electrocardiogram May 12 showed a persistence of the complete block with a decrease in voltage of the ventricular complexes in the limb leads and an occasional ectopic beat from a focus in the other ventricle.

Delivery by section had been decided on, and on May 14 the operation was performed under ethylene and pentobarbital sodium ("nembutal") anesthesia. No difficulties were encountered, and a normal female child breathed immediately. A continuous electrocardiogram (fig. 3) was taken on lead 2

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1. Diddle, A. W.: Auriculoventricular Block in Pregnancy, West. J. Surg. **49:** 220, 1941.
2. Yepez, C. G.: Complete Auriculoventricular Block and Pregnancy, Rev. de obst. y gynec. de Caracas **3:** 1, 1946.
3. Quentin, T. J.: Complete Heart Block in Pregnancy, Canad. M. A. J. **55:** 600, 1946.
4. Mitchell, F. B.; Fettes, E. S., and Hollander, A. G.: Complete Heart Block Complicating Pregnancy: Case Report, Am. J. Obst. & Gynec. **47:** 340, 1943.
5. Barton, R. M., and LaDue, C. N.: Complete Heart Block in a Case of Pregnancy, Am. J. Med. **4:** 447, 1948.

during operation. This showed a two to one block, with prolongation of the auriculoventricular and interventricular conduction time and no significant changes in the rate or in the appearance of the various complexes at any time during the delivery.

Postoperatively she continued to do well, and another tracing the morning following operation showed alteration between a two to one and complete block and two types of sinus rhythm: one with an auriculoventricular conduction time of 0.28 of a second followed by an almost normal ventricular complex and the other with an auriculoventricular conduction time of 0.34 of a second followed by a notched widened ventricular complex. Fairly large doses of atropine were then given in the hopes of restoring a normal rhythm, but without apparent effect.

The tracing taken May 26 showed a persistence of the two to one block. She was allowed out of bed the following day and had a chill and temperature rise to 101.5 F., which we ascribed to pyuria. On examination that evening the liver edge, which had been palpable 2 to 3 cm. below the costal margin, was felt about 8 cm. below the costal margin in the midclavicular line and was rather tender. We decided to digitalize her, and she was then given a maintenance dosage of a 1½ grain (0.1 Gm.) a day for the remainder of our observation.

On May 27, a roentgenogram showed about 50 per cent generalized cardiac enlargement, with prominence of the pulmonary artery suggestive of mitral stenosis. Activity was gradually resumed, and she was discharged from the hospital June 4. Electrocardiograms taken June 25 and September 5 again revealed complete heart block. She was last seen by us on Dec. 13, 1946, still symptom free, with limited activity, and another electrocardiogram was identical with that of September 5. The liver edge was palpable 6 cm. below the costal margin, soft and slightly tender. She was continuing to take digitalis, 1½ grains (0.1 Gm.) daily. Her child was well. At no time had she experienced any symptoms resembling those of a Stokes-Adams attack.

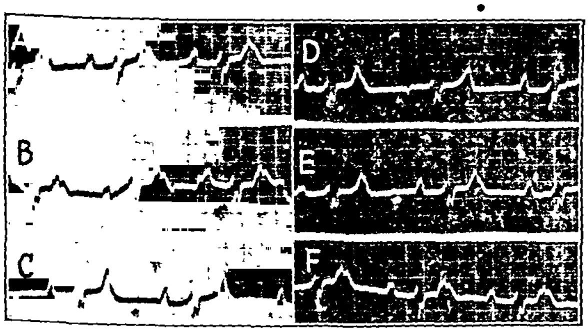

Fig. 3.—Electrocardiogram of May 14, 1946 (continuous tracing taken in lead 2 during cesarean delivery)—two to one block. *A*, 7: 50 a. m., patient completely anesthetized. *B*, 7: 53 a. m., abdominal wall opened. *C*, 7: 58 a. m., uterus opened. *D*, 8: 01 a. m., child delivered. *E*, 8: 03 a. m., placenta delivered. *F*, 8: 08 a. m., uterus closed.

COMMENT

In our opinion this patient had a combination of rheumatic mitral disease and a congenital interventricular septal defect. It is impossible to state which lesion produced the complete heart block. Evidence of damage to the bundle of His was present in the tracing taken November 9. Further injury to this organ was probably caused by ischemia secondary to added heart strain as the pregnancy progressed, and various stages of relative anoxemia of the bundle of His probably produced the variations observed in the degree of block. The patient reported by Sigler[6] showed somewhat similar changes.

The absence of any significant changes in the electrocardiographic pattern during this delivery contrasts with a series of tracings taken by Scholder[7] during a similar delivery. His records showed extrasystoles from several foci, ventricular tachycardia and auricular flutter. The anesthetic used in his case was cyclopropane. It seems likely that the arrhythmias were due to the cyclopropane, as we have seen auricular fibrillation, paroxysmal tachycardia and cardiac standstill following its use. We believe that it is definitely contradicted as an anesthetic in patients with cardiac disease, particularly so if there is a history of any arrhythmia.

SUMMARY AND CONCLUSION

A case of complete heart block in pregnancy is presented. The block developed in the seventh month of pregnancy and continued sixteen months post partum. The child was well as of the time of writing. A review of the literature reveals that complete heart block when asymptomatic and not accompanied with other serious cardiac disorders is of little or no significance during pregnancy or labor.

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[6] Sigler, H. L.: Heart Block and Pneumonia Complicating Pregnancy, Am. J. Obst. & Gynec. **33**: 157, 1937.

[7] Scholder, B.: Heart Block in Pregnancy: Case Report, Am. J. Obst. & Gynec. **38**: 320, 1939.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

MANNITOL HEXANITRATE (See New and Nonofficial Remedies 1947, p. 254).
The following dosage form has been accepted:

Cole Chemical Co., St. Louis 8
Tablets Mannitol Hexanitrate: 32 mg.

PENICILLIN (See New and Nonofficial Remedies 1947, p. 144).
The following dosage form has been accepted:

R. E. Dwight & Company, Des Moines 9, Iowa
Crystalline Penicillin G Potassium: 100,000, 200,000, 500,000 and 1,000,000 unit vials

Chas. Pfizer & Co., Inc., Brooklyn 6
Crystalline Procaine Penicillin G: Bulk. 500,000,000 units, 500 mg. vials.

Crystalline Procaine Penicillin G in Oil: 300,000 units per cc. in sesame oil, 10 cc. vials.

STREPTOMYCIN (See New and Nonofficial Remedies 1947, p. 150).
The following dosage form has been accepted:

Premo Pharmaceutical Labs., Inc., South Hackensack, N. J.
Streptomycin Calcium Chloride Complex: Vials containing streptomycin calcium chloride complex equivalent to 1 Gm. of streptomycin base.

SULFAMERAZINE-U. S. P. (See New and Nonofficial Remedies 1947, p. 125).
The following dosage form has been accepted:

S. E. Massengill Co., Bristol, Tenn.
Tablets Sulfamerazine: 0.5 Gm.

DIPHENHYDRAMINE HYDROCHLORIDE (See New and Nonofficial Remedies 1947, p. 20).
The following additional dosage form has been accepted:

Parke, Davis & Co., Detroit 32
Kapseals Benadryl Hydrochloride: 25 mg.
U. S. Trademark 416,252.

ESTROGENIC SUBSTANCES (WATER SOLUBLE) (See New and Nonofficial Remedies 1947, p. 346).
The following additional dosage form has been accepted:

Ayerst, McKenna & Harrison, Ltd., New York
Tablets Premarin: 0.3 mg.
U. S. Trademark 397,925.

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SATURDAY, DECEMBER 4, 1948

SURVEY OF MEDICAL EDUCATION

Elsewhere in this issue is an announcement of the appointment of the director of the survey of medical education which is being conducted by the Committee to Survey Medical Education under the joint sponsorship of the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges. The survey will begin Jan. 1, 1949, and will extend over a period of three years. At its completion, a detailed report of the Committee's findings and recommendations will be published.

One of the important forces that have raised medical education in this country to its present high level has been the capacity of the medical profession and medical educators to indulge in self criticism and to exercise self regulation. It may be expected that the present survey will follow the tradition of previous surveys by emphasizing the deficiencies rather than the accomplishments of our present form of medical education. Such an approach will contribute most to further advances.

Almost fifteen years have elapsed since the last complete survey of medical education in this country. In the interval there have been important advances in medical science and in the understanding of the nature of disease. Equally significant changes have occurred in the conditions of medical practice and the needs of society. Other problems have been created for the medical schools by the impact of war and the period of inflation that has followed the war. A consideration of all these factors makes it clear that the time is appropriate for a thorough reevaluation of the structure and conduct of medical education. It is fortunate that the survey is to be conducted by a group that understands the basic problems of the medical schools and that at the same time is prepared to point to the need for change in the present methods of training physicians.

This study will be the third major survey of medical education in the past forty years. The beneficial effects on the quality of medical education and medical care of the surveys conducted by Abraham Flexner and H. G. Weiskotten are well known. It may be predicted that the constructive criticisms and suggestions that will be incorporated in the final report of the present survey will have an equally far reaching influence on the course of medicine in this country.

VITAMIN A AND ASCORBIC ACID

For a long time after the discovery of the various vitamins, the idea of specificity played a prominent part in their characterization. Such descriptive names as "antineuritic factor," "antidermatitis vitamin," "anti-infective factor" and "growth vitamin" were given to indicate the precise biologic deviation from normal resulting from the appropriate deficiency in the diet. The fact that these descriptive names have largely disappeared from the vocabulary of careful workers in the field of nutritional biochemistry means that the earlier concepts of specificity have undergone modification in the light of improvement in the technics of conducting nutrition experiments. Furthermore, the foregoing trend implies a new concept of coordination or interdependence of action among the vitamins.

A recent contribution[1] emphasizes anew the connection between vitamin A and ascorbic acid; the Yale workers point out that typical signs of vitamin C deficiency (bleeding of the lacrimal glands, red and swollen gums, swelling of the joints) appear under conditions of lack of vitamin A in the rat, a species ordinarily not requiring ascorbic acid in the ration. Vitamin C added to the A-deficient diet corrects the scorbutic symptoms. Others have noted similar relations between the two dietary factors. Thus Burn and co-workers[2] observed histologic changes highly suggestive of scurvy occurring in molars of adult rats which had been maintained on a diet with minimal vitamin A. In other experiments,[3] similar dental changes produced in rats following vitamin A restriction led to the statement that in vitamin A deficiency the rat loses the capacity to synthesize ascorbic acid. Likewise, it has been shown in calves[4] that after withdrawal of vitamin A from the ration the level of ascorbic acid decreases not only in the blood but also in the cerebrospinal fluid and that the characteristic increase in cerebrospinal fluid pressure is roughly inversely proportional to the drop in vitamin C concentration therein.

There are numerous reports of the influence of ascorbic acid on the metabolism of the aromatic amino acids from protein. Incomplete oxidation products of tyrosine and phenylalanine have been demonstrated in the urine of scorbutic guinea pigs[5] and in the urine of premature infants not consuming vitamin C.[6] In each case the metabolic abnormality is rectified by administration of ascorbic acid. Indeed, it has been shown that slices of guinea pig liver will or will not oxidize tyrosine depending on whether or not the guinea pig was on a vitamin C–containing ration.[7] That this function of ascorbic acid may be the connection in the interrelationship of this vitamin with vitamin A is suggested by Mayer and Krehl,[8] who observed that the first signs of vitamin A deficiency in rats were those of scurvy and that in the absence of added ascorbic acid the increase in dietary protein resulted in exaggeration of the symptoms of vitamin A deficiency. As vitamin C is involved in protein metabolism (through its effect on tyrosine and phenylalanine metabolism), intensifying the need for ascorbic acid may result in more pronounced evidence of lack of vitamin A.

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[1] Mayer, J., and Krehl, W. A.: Arch. Biochem. **16**: 313, 1948.

[2] Burn, C. G.; Orten, A. U., and Smith, A. H.: Yale J. Biol. & Med. **13**: 817, 1941.

[3] Jonsson, G.; Obel, A. L., and Sjöberg, K.: Ztschr. f. Vitaminforsch. **12**: 300, 1942.

[4] Boyer, P. D.; Phillips, P. H.; Pounden, W. C.; Jensen, C. W.; Rupel, I. W., and Nesbit, M. E.: J. Nutrition **23**: 525, 1942.

The interrelation of the vitamins becomes more reasonable as progressively more information is secured regarding the complexity of the vital equilibriums and the importance of chemical compounds that formerly were thought to be more or less accidental. The profound significance of relatively simple compounds of phosphorus in the metabolism of the major foodstuffs is a case in point. The dictum of the earlier students of nutrition, namely, to eat a broad variety of foods, receives increasing experimental support as time goes on.

DDT TOXICITY

In animals the toxicity of ingested substances frequently depends on the composition of the concurrent diet. Thus a diet high in protein has been found to protect animals against such toxic agents as arsphenamine, chloroform and selenized wheat.[1] Dietary fats augment the toxicity of chloronitrobenzene and dinitrotoluene.[2]

The widespread use of DDT (dichlorodiphenyltrichloroethane) as an insecticide has thus led Sauberlich and Baumann,[3] of the College of Agriculture, University of Wisconsin, to study the effects of proteins and fats on the toxicity of ingested DDT. In preliminary tests, DDT was incorporated in their routine laboratory diet and fed to young mice and rats in graded concentrations ranging from 0.01 to 0.15 per cent. At a concentration of 0.01 per cent, the mice survived for nine weeks. At 0.05 per cent, they died within two weeks. At intermediate concentrations (e. g., 0.03 to 0.04 per cent) half of the animals lived for four weeks. Rats responded like mice to DDT, though higher concentrations were necessary before deaths resulted in a comparative period. In rats, 0.15 per cent DDT was about as toxic as 0.04 per cent in the mouse. Since mice consume two to three times as much food per unit of body weight as rats, the amount of ingested DDT per unit of body weight to produce lethal effects was approximately equal in the two animal species.

The symptoms of toxicity were similar in rats and mice. These were characterized by hyperexcitability, followed by a jerking or retraction of the head. This soon developed into general tremors. These increased in severity until there were complete loss of control, convulsions and death. There was no appreciable reduction in growth rate until the tremors became so severe as to interfere with feeding.

To test the effects of variations in the amount of dietary proteins and fats, groups of rats or mice were fed modifications of a basic laboratory diet to which 0.03 to 0.04 per cent DDT for mice or 0.15 per cent DDT for rats had been added. This basic diet consisted of 20 Gm. crude casein, 69 Gm. dextrin, 5 Gm. corn oil, 2 Gm. "celluflour" (cellulose) and 4 Gm. Wesson's salts,[4] plus adequate amounts of 9 synthetic vitamins.

In a typical test three groups of young mice were fed rations containing 20 per cent protein but with varying amounts of corn oil. To each of these ratios 0.03 per cent DDT was added. Fifty per cent of the group fed 5 per cent corn oil died by the end of six weeks. One hundred per cent of the group in which the amount of corn oil was reduced to 0.5 per cent were alive at the end of this period. In the group in which the corn oil had been increased to 15 per cent, 100 per cent died. Reducing the percentage of corn oil thus saved the lives of half of the group. Increasing its percentage caused the death of twice the control number. Similar results were obtained in experiments in which butter, lard or other fats were substituted for corn oil, and with rats tested with larger doses of DDT.

Just the opposite results were obtained in groups of mice fed varying amounts of protein. Reducing the protein to 10 per cent doubled DDT toxicity. Increasing the protein to 50 per cent rendered DDT relatively nontoxic.

The Wisconsin biochemists believe that the greater sensitivity of mice and rats fed DDT in high fat diets is due primarily to the greater efficiency of absorption of fat-soluble DDT. A theory has not yet been suggested to account for the antitoxic (anti-DDT) action of protein.

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[4] A salt mixture containing only inorganic constituents.

Current Comment

OSTEOPATHS LOSE KANSAS CASE

The three judge federal court convened at the request of four Kansas osteopaths in a unanimous decision Nov. 16, 1948, upheld the constitutionality of the Kansas osteopathic act. In doing so, the court gave full recognition to the right of the state to confine osteopaths to manipulative therapy and to deny to them the right to "use or administer medicinal therapeutics or operative surgery with instruments." The court pointed out that prior to and since the enactment of the osteopathic act in 1913 "the science of osteopathy has been and is now based upon the concept that the curative powers for bodily disease, infirmity or disability, are within the body itself, and if the structural integrity of the body is maintained, the natural cures will combat the disability; that the art and science of osteopathy lies in detecting and correcting structural derangements in the body by manipulative therapy." In Kansas, the court said, "the osteopathic profession is classified and regulated as a drugless and knifeless healing art or science." An appeal from this decision may be taken direct to the United States Supreme Court.

CICATRIZING ENTERITIS (REGIONAL ILEITIS) AS A PATHOLOGIC ENTITY

The term "cicatrizing enteritis" is used by Warren and Sommers instead of "regional ileitis" in their analysis[1] of the pathologic features in 120 unselected cases. This analysis is coupled with a comprehensive review (206 items) of the corresponding literature, especially on the developmental stage of the disease. In cicatrizing or regional enteritis the terminal part of the ileum in the young adult is most often affected; hence the term regional ileitis was used by Crohn, Ginzburg and Oppenheimer in their classical description in 1932,[2] but as the jejunum, upper ileum, appendix, cecum or colon may be involved, the word "enteritis" is obviously more appropriate. Warren and Somers characterize the gross lesions as a sharply demarcated induration and edema of a part of the intestine and its mesentery, with enlargement of regional lymph nodes. The microscopic appearances indicate that swelling and proliferation of the lymphatic endothelium in the intestinal wall and in lymph nodes occlude the lymphatics with resulting edema; also that granulomatous tissue with multinuclear cells and gradual hyalinization develops in the intestinal wall, the mesentery, the lymph nodes and the liver. In the later stages a subacute and chronic inflammatory process with fibrosis and muscular hyperplasia develops in the affected enteric wall. Hitherto all efforts to explain the causation of regional enteritis have failed. An etiologic agent has not been found in the lesions. Tuberculosis has been definitely excluded. But, while the cause remains unknown, there seems to be no reason to question the conclusion that the structural changes establish regional enteritis as a pathologic entity.

NECROSIS OF THE LIVER IN TRANSFUSION FOR ERYTHROBLASTOSIS

In the treatment of erythroblastosis fetalis by exchange transfusion the blood of the infant is replaced by compatible citrated blood of a donor. The amount of blood transfused varies from 500 to 1,000 cc., and a 90 per cent exchange of blood can be made in about ninety minutes. The report by Rosenblatt[1] of massive necrosis of the liver in 3 infants with erythroblastosis who *died after this exchange transfusion* raises the question of the safety of the exchange-transfusion as now practiced. In the Rosenblatt cases the clinical record and blood tests of each mother indicated fetal erythroblastosis and cesarean sections were made before term. The infants promptly received compatible exchange transfusions but died in two to five days, all with acute, massive necrosis of the liver. In 2 there were also focal necroses in the adrenals. The cause of the necrosis is not explained. Nothing is said about any bacteriologic examinations in the cases. Rosenblatt suggests that a combination of factors may have been responsible: the presence of erythroblastosis, excessive amounts of sodium citrate or calcium gluconate in the transfused blood and undue speed of transfusion. He also suggests that heparinized blood be used in order to avoid the use of sodium citrate or of calcium gluconate. The possibility of acute infection or microbic intoxication in exchange transfusion must not be overlooked.

SPECIALISTS IN RURAL AREAS

A general practitioner after certification as a specialist in internal medicine began specializing in a midwestern village with a population of 700 near the community in which he was born.[1] His principal interest was in cardiovascular disease, and he had been successful in the care of patients suffering from brucellosis. The hospitals nearest to this village were 12 miles away. The nearest specialist in his field and the nearest good clinical laboratories were 50 miles away. He established his own laboratory and has two full time technicians who do all but the most complicated tests. The county is a prosperous agricultural area with a population of 30,000. The surrounding counties from which patients might come increase the total population to 100,000. He settled in this village because he knew and liked the people and, most important, he wanted to live there. His practice, he reports, has been satisfactory from financial and professional points of view. He owns his home and office, and his family is now well established in the community. The most undesirable feature, he says, has been professional isolation. There are numerous *communities in rural areas in the United States* which need specialists and which could provide the local requirements for the successful practice of a specialty. Some of these towns now have hospitals, and, as the hospital program progresses, many more towns will have well equipped hospitals.

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ORGANIZATION SECTION

Official Notes

SURVEY OF MEDICAL EDUCATION

The Committee to Survey Medical Education has announced the appointment of Dr. John E. Deitrick of New York as full time director of the survey of medical education that is being sponsored by the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges. Dr. Deitrick graduated from the Johns Hopkins University School of Medicine in 1933. He interned at John Hopkins Hospital and served as resident in medicine at the New York Hospital. He has been a member of the faculty of the Cornell University Medical College since 1934 and is now associate professor of medicine and medical direc'or and director of post graduate instruction of the Second (Cornell) Medical Division, Bellevue Hospital, New York.

Dr. Deitrick will assume his duties as director of the Survey of Medical Education on Jan. 1, 1949. His office will be in the headquarters building of the American Medical Association, 535 North Dearborn Street, Chicago.

The seven members of the Committee to Survey Medical Education are Alan Valentine, chairman, Drs. Arthur C. Bachmeyer, Herman G. Weiskotten, Joseph C. Hinsey, Victor Johnson, Dean F. Smiley, ex officio, and Donald G. Anderson, ex officio, secretary. The committee has stated that the objective of the survey will be:

"To evaluate the present programs and determine the future responsibilities of medical education in its broadest aspects for the purpose of:

"1. Improving medical education to better meet the overall needs of the American people, for the prevention of disease, the restoration as far as possible to health to all those who have suffered ill health or injury, and for the maintenance of the best standards of physical and mental health of all the people.

"2. Assessing the degree to which medical schools are meeting the needs of the country for physicians.

"3. Promoting the advancement of knowledge in the field of medical science.

"4. Better informing the public concerning the nature, content and purposes of medical education."

It is planned to devote three years to the conduct of the survey. At its completion a comprehensive and detailed report of the committee's findings and recommendations will be published.

1949 NBC NETWORK BROADCASTS

The network program on the National Broadcasting Company will be resumed in a new form during the first week of January, 1949. The precise date and time will be announced when available. This will be the seventeenth continuous year of broadcasting on the network of the National Broadcasting Company. The first two years were devoted to talks by Drs. Morris Fishbein and W. W. Bauer. The next fourteen years were devoted to dramatizing the health message, this being the first nationwide network health program and the longest in continuity. The 1949 format will be entirely new.

The Bureau of Health Education has communicated with state medical societies and offered each of them an opportunity to participate in one of the network broadcasts on a sharing basis, three medical societies to a broadcast. Each medical society is asked to announce in three minutes of radio time its outstanding contribution to public health, medical care, research or other phases of public service. Interspersed among these participating programs will be dramatized programs on important advances in medical service and medical progress. One or more programs will be devoted to participation by medical schools on the same basis as state society participation described above.

In response to a listeners' survey, which indicated that a thirty minute dramatization might be longer than necessary, the new program format calls for fifteen minutes each week. Arrangements have been made for eighteen weeks, subject to possible extension.

Miss Judith C. Waller, Director of Public Service, Central Division, National Broadcasting Company, and W. W. Bauer, M.D., Director of the Bureau of Health Education, are the general supervisors of the broadcasts.

DIABETES WEEK BROADCAST

The American Medical Association will cooperate with the American Diabetes Association in a special broadcast over the network of the National Broadcasting Company, Saturday, Dec. 11, 1948, at 4:30 p.m., eastern standard time (3:30 p.m. central standard time; 2:30 p.m., mountain standard time; 1:30 p.m., Pacific standard time).

The program will be entitled "Calling Unknown Diabetics" with special reference to finding persons with undiscovered and potential diabetes in order to bring them under medical treatment. The program will be a closing feature of National Diabetes Week, in which many publicity mediums will be employed toward the identification of persons potentially diabetic.

The program will consist of a brief dramatic opening followed by switches to various parts of the country to pick up five speakers: Elliott P. Joslin, M.D., from Boston, Charles H. Best, M.D., from Toronto, Lester J. Palmer, M.D., from Seattle, Howard F. Root, M.D., from Boston, and a diabetic patient from New York. It will also include a dramatic presentation of the problems involved in the discovery and treatment of diabetes.

The script is being written by William J. Murphy, and the production director will be Homer Heck.

REVIEWS OF MEDICAL MOTION PICTURES

The Committee on Medical Motion Pictures has prepared a booklet containing all of the medical motion picture reviews published in THE JOURNAL, through Jan. 17, 1948. The purpose of these reviews is to provide a brief description and evaluation of motion pictures which are available to the medical profession. Each film is reviewed and commented on by competent authorities. This is not a list of films approved by the American Medical Association. One copy has been mailed to the secretary of each county and state medical society. Additional copies are available on request.

Washington Letter

(From a Special Correspondent)

Nov. 29, 1948.

State Health Officers Take Broad Range of Action

At its annual meeting in Washington November 14-17, the Association of State and Territorial Health Officers adopted resolutions and committee reports covering a wide range of subjects. No action was taken, however, on national health insurance, following Federal Security Administrator Oscar R. Ewing's address to the group in which he called on the Association and its members to help assume leadership in educating the public on "the most comprehensive program of health that has ever been offered to the people of the United States."

The Association went on record favoring: expansion of local public health services throughout the country, assisted financially with federal funds; establishment of a Department of Health, Education and Welfare in the federal government and absorption by the U. S. Public Health Service of health programs currently conducted by the Children's Bureau; a survey of premarital blood test laws in the various states with the view of formulating a uniform bill applicable to all; drafting by the U. S. Public Health Service of a long range plan for recruitment of public health personnel, "a matter of prime importance in meeting the critical public health problems now confronting the nation and [which] is vitally related to the problem of national security"; appointment of state health officers, or their representatives, as chiefs of medical and hospital services in the prospective civil defense organizations in the various states; amendment of the Hill-Burton Hospital Survey and Construction Act to authorize higher appropriations for hospital construction and for administration of hospital construction programs; establishment of closer relations between state health departments and the American Heart Association and American Diabetes Association, and establishment of the proposed Public Health Conference on Records and Statistics.

Dr. R. H. Hutcheson, Tennessee State Commissioner of Health, was elected president of the Association of State and Territorial Health Officers, succeeding Dr. Vlado A. Getting, Massachusetts Commissioner of Public Health. Dr. Wilton L. Halverson, California State Director of Public Health, was elected vice president.

Pharmaceutical Survey Report Published

Findings and recommendations of the Pharmaceutical Survey, launched in the spring of 1946 under auspices of the American Council on Education, were published November 22 in the form of a 50 page printed report. Among highlights of the report are: a recommendation that pharmaceutical industry and commerce increase financial support of education in this professional field; emphasis of the desirability of teaching pharmacy students how to work most efficiently with members of other health professions, "to furnish accurate, objective and scientific information to physicians and members of other health professions concerning drugs and their action"; recommendations designed to achieve more accurate records on manpower strength of pharmacists in the United States and to lead to reexamination and reaccrediting of training institutions.

"During recent years," said the report, "the leading manufacturers and distributors of pharmaceutical products have been disposed to provide considerable financial assistance to institutions devoted to medical education and research. . . . The creation and operation of the American Foundation for Pharmaceutical Education is convincing evidence that these same representatives of pharmaceutical industry and commerce have not neglected to include pharmacy within the range of their helpfulness. Nevertheless, when the amount of the grants made during the past five years to medicine is compared to the grants made to pharmacy, the question is raised as to whether pharmacy has been the recipient of its rightful proportion of such grants. Certainly the manufacturers and distributors of medicinals have a vested interest in the character and the performances of the trained pharmacists who are their most important connecting link with the consuming public."

Copies of the report may be purchased from American Council on Education, 744 Jackson Place, Washington, D. C.

Sanitary Engineering Activities Reorganized

Designed to decompartmentalize sanitary engineering functions of the U. S. Public Health Service and bring them into closer integration with medical and public health activities, a reorganization plan has been completed and placed in effect. Assistant Surgeon General Mark D. Hollis is in charge of the new office, which consists of three divisions: water pollution control, sanitation and environmental health. Their heads, respectively, are Carl E. Schwob, C. H. Atkins and Vernon G. Mackenzie. Sole medical officer in the new administrative setup is Dr. E. G. Williams, head of the radiologic health unit, which is responsible directly to Mr. Hollis.

Child Research Institute Bill Being Drafted

A provisional draft of legislation which would add a Child Research Institute to the federal health and welfare establishment will be presented for discussion at a conference sponsored by the American Parents Committee and to be held in Washington November 23. Other topics on the agenda include national health insurance, local public health services legislation, school health servcies and federal aid to education.

Robert R. Sears, head of the University of Iowa Child Welfare Station, is chairman of the committee which is drafting the child research bill for submission to the assembly. Present plans are to have the legislation introduced soon after the Eighty-First Congress is convened.

Radiologists Hear Dr. Brailsford

Dr. James F. Brailsford, one of England's best known radiologists, addressed the radiology section of the Medical Society of the District of Columbia on October 28. His subject was "The Effects of Trauma on Bones and Joints." Accompanied by Mrs. Brailsford, the founder and first president of the British Association of Radiologists (now the Faculty of Radiologists) is on a lecture tour of the United States.

General Hume Lectures in Chile

Brig. Gen. Edgar Erskine Hume of the Army Medical Corps arrived in Chile late in November on a State Department mission to lecture on social medicine and public health at the University of Chile. On November 19 he opened a new 120 bed tuberculosis hospital named in memory of Franklin D. Roosevelt. Located 25 miles (40 kilometers) from Santiago, it was erected jointly by the Chilean government and Institute of Inter-American Affairs at a cost of $300,000.

Chiropractic Lobbyist Changes Affiliation

The Secretary of the Senate has been informed by Emmett J. Murphy, of Washington, that his registration under the federal lobbying law should be modified to show that he now represents the National Chiropractic Association as public relations director. Formerly he was registered as an employee of the National Chiropractic Insurance Company.

Crude Death Rate Drops to 10.0 per Thousand

For the first nine months of 1948, the nation's crude death rate was 10.0 deaths per thousand estimated population, according to the National Office of Vital Statistics (U. S. Public Health Service). The corresponding rate for the corresponding period of 1947 was 10.2. The rate was 10.1 for the calendar year 1947 and 10.0 for 1946. Among the states, Vermont had the highest crude death rate in 1947—12.0.

Coming Medical Meetings

American Academy of Allergy, Atlantic City, Chalfonte-Haddon Hall, Dec. 6-8. Dr. Theodore L. Squier, 425 E. Wisconsin Ave., Milwaukee 2, Secretary.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 5-9. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, Secretary.

American Society of Tropical Medicine, New Orleans, Roosevelt Hotel, Dec. 5-9. Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Maryland, Secretary.

Association for Research in Nervous and Mental Diseases, New York, Waldorf-Astoria Hotel, Dec. 10-11. Dr. Clarence C. Hare, 700 W. 168th St., New York 32, Secretary.

Eastern Section, American Federation for Clinical Research, Philadelphia, Temple University School of Medicine, Dec. 4 Dr. J. Edward Berk, Temple University School of Medicine, Philadelphia, Chairman.

Puerto Rico, Medical Association of, Santurce, Dec. 10-12. Dr. J. Basora Defillo, Box 3866, Santurce, Secretary.

Radiological Society of North America, San Francisco, Dec. 5-10. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, Dallas, Texas, Hotel Adolphus, Dec. 6-7. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 7-9. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, St. Louis, Dec. 2-4. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

ANNUAL MEETING OF LIBRARY CONSULTANTS

The fifth annual meeting of the Association of Honorary Consultants to the Army Medical Library was held on October 22 in Washington, D. C. Dr. Chauncey D. Leake, president of the association, opened the meeting, and Col. Joseph H. McNinch, director of the library, presented greetings from the Surgeon General. Reports of committee meetings held the previous day were made by Dr. Robert M. Stecher, chairman of the acquisition committee; Dr. Henry R. Viets, chairman, committee on historical medicine, and Col. Harold W. Jones, acting chairman, committee on grants and endowments. In the absence of Dr. George W. Calver, acting chairman of the building committee, his report was presented by Dr. Leake.

Papers by Mr. Ralph R. Shaw, Librarian of the Department of Agriculture, Col. Joseph H. McNinch, and Dr. Sanford V. Larkey, Librarian of the Welch Medical Library of Johns Hopkins University, developed the problem of indexing medical literature and its relation to the Army Medical Library. Dr. Larkey outlined in detail the scope of the exploratory project to be conducted under his direction.

At the luncheon the relation of the Army Medical Library and the Library of Congress classifications was discussed by Mr. Ralph R. Shaw, Miss Mary Louise Marshall, Colonel McNinch and Major Frank B. Rogers of the Army Medical Library, and Dr. Luther R. Evans, Dr. Frederick H. Wagman and Mr. David J. Haykin of the Library of Congress. Before the afternoon session Major Rogers spoke on "A Classification for the Army Medical Library" and Mr. Joseph A. Groesbeck on "Medical Literature in Japan."

A resolution was adopted to extend the sympathy of the members of the association to the family of Col. Richard P. Strong, honorary consultant to the Army Medical Library, who died on July 4.

On the recommendation of the nominating committee, Dr. Morris Fishbein was elected for a second four-year term on the executive committee and Colonel McNinch was elected secretary of the association. The office formerly known as secretary-treasurer was separated into secretary and treasurer, and Colonel Jones will continue as treasurer.

At the dinner on Friday evening, Dr. Leake acted as toastmaster. Addresses were made by Brigadier General George E. Armstrong, Deputy Surgeon General of the Army; Dr. John F. Fulton, former president of the Association of Honorary Consultants to the Army Medical Library, and Brigadier General Edgar Erskine Hume, Army General Staff. A motion picture, "The Mayo Clinic Library, An Introduction to Its Use," was then shown by Mr. Thomas E. Keys.

NAVY

CERTIFICATE OF APPRECIATION

The University of California School of Public Health was awarded a certificate of achievement by the Bureau of Medicine and Surgery in a ceremony on the campus October 21 in appreciation of the school's training of sanitation officers for the Navy. Dr. Walter Mangold, associate professor of public health, received a certificate of appreciation for his work in behalf of the training program which was set up by the school during the war, 160 men graduating from the course. Dr. A. P. Krueger, U.S.N.R., professor of bacteriology, was instrumental in establishing the curriculum.

POSTGRADUATE TRAINING

The following medical officers have been nominated for postgraduate training: Comdr. Bernard I. Kahn of Ardmore, Okla., to a fellowship in psychiatry at Langley Porter Clinic, San Francisco; Lieut. Comdr. James A. Addison of Shreveport, La., to a residency in general practice at the Naval Hospital, Chelsea, Mass.; Lieut. Comdr. August R. Buerkle of Pittsburgh to a residency in orthopedic surgery at the New York Orthopedic Dispensary and Hospital of Columbia University Medical Center, and Lieut. Comdr. Bruce L. Canaga Jr. of Berkeley, Calif., to instruction in internal medicine at Northwestern University Medical School, Chicago. Commander Wallace E. Allen, of Modesto, Calif., has been nominated to take postgraduate training in a residency in otolaryngology at the Naval Hospital, Pensacola, Fla.

PERSONALS

Lieutenants (jg) Lewis B. Clayton of Fort Lauderdale, Fla., and Claude A. Hendrix of Jeffersonville, Ind., have accepted appointments in the reserve medical corps and have been ordered to their first active duty as interns.

Lieutenant Commander Warner D. Bundens Jr., of Mickleton, N. J., has transferred from an active reserve status to the Regular Navy Medical Corps.

AIR FORCE

SURVEY OF EDUCATIONAL PROGRAM

The Committee on Medical Sciences of the National Research and Development Board arrived at the School of Aviation Medicine, Randolph Field, Texas, November 1 to confer on research activities and projects. After a conference with the faculty, the group made a survey of the educational program and research facilities of the school and will submit a report to the Air Surgeon, the commanding general, Air University, and the National Research and Development Board. The delegation comprised Dr. Francis G. Blake of Yale University, chairman of the group; Dr. John A. Lockwood, professor of surgery, Yale University, and consultant to the Secretary of War; Dr. Lowell T. Coggeshall, research division, Rockefeller Foundation, and Dr. Joseph F. Sadusk Jr., consultant to the Surgeon General in epidemic diseases and former executive officer, United States of America Typhus Commission. Brigadier General George E. Armstrong, Deputy Surgeon General, accompanied the group. The Air Surgeon was represented by Brigadier General John M. Hargreaves, M.C., and Colonel William J. Kennard, M.C. Navy personnel included Captain W. P. Dana, M.C., Captain Christopher C. Shaw, M.C., and Commander Earle C. Metcalfe, M.C.

DISCUSSION OF AVIATORS' VISION PROBLEMS

Civilian ophthalmologists, physicists, lighting experts and psychologists met November 11-12 with ophthalmologic specialists of the Armed Forces Medical Service at the School of Aviation Medicine, Randolph Field, Texas, to discuss vision problems encountered by aviators. A report of a five year study of ocular fatigue was presented by Dr. Conrad Berens, New York, in conjunction with S. B. Sells, Ph.D., of the psychology department of the School of Aviation Medicine. Discussed also was the result of research at the school on visibility of aircraft insignia, runway markings, motion parallax as a factor of depth perception and color saturation threshold meter. Among those attending the conference were Donald G. Marquis, Ph.D., executive secretary of N. R. C. Vision Committee; Louise Sloan Rowland, Ph.D., Wilmer Institute, Johns Hopkins; H. Richard Blackwell, Ann Arbor, Mich.; Henry A. Inus, Medical Science Division, Office of Naval Research; Dr. Richard G. Scobee, Director of Graduate Training in Ophthalmology, Washington University, St. Louis; Brian O'Brien, Ph.D., director, Institute of Optics, Rochester, N. Y., and E. O. Hulburt, Ph.D., Naval Research Laboratory, Washington, D. C.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Los Angeles Postgraduate Lectures.—A series of lectures is being given under the auspices of the Los Angeles City Health Department to be administered by the Department of Infectious Diseases of the Medical School of the University of California, Los Angeles, and the University Extension. There will be no enrollment fee. Remaining lectures on the series are as follows:

Dec. 9, Albert G. Bower and Louis J. Fisher, Glendale, Diphtheria; *Differential Diagnosis of Infectious Mononucleosis, Septic Sore Throat* and Vincent's Angina.
Dec. 16, Evelynne G. Knouf, San Marino, Enteric Infections; Typhoid Fever and Bacillary Dysentery.
Jan. 6, Charles M. Carpenter, Rochester, N. Y., and Leon Rosove, Santa Monica, Brucellosis.
Jan. 13, William P. Frank, Alhambra, and Charles M. Carpenter, Los Angeles, Pertussis; Influenzal Meningitis.
Jan. 20, Thomas Francis Jr., Ann Arbor, Mich., Influenza.
Jan. 27, William J. Mitchell, Alhambra, Measles, Mumps and Chickenpox—*Diagnosis, Treatment and Complications.*
Feb 3, Albert G. Bower, Glendale, and Norman B. Nelson, Los Angeles, Poliomyelitis.

COLORADO

University to Cooperate with Surrounding States.—The University of Colorado, Denver, has initiated steps which will make it possible to concentrate all its teaching and service activities in the field of health and also for the medical center to cooperate with surrounding states in activities having to do with education in this field. In line with the necessary administrative reorganization, Dr. Ward Darley Jr., has been appointed executive dean of health sciences and services, and has resigned as dean of the school of medicine. He will continue as director of the medical center. Robert C. Lewis, Ph.D., Denver, has been appointed acting dean of the school of medicine; Dr. Robert S. Liggett will continue as assistant dean. Dr. George A. W. Currie, Picton, Ontario, Canada, has been appointed administrator of hospitals replacing Mr. Robert C. Kniffen, who has recently been appointed superintendent of New Britain General Hospital, New Britain, Conn.

ILLINOIS

Report on Cancer Diagnostic Clinics.—During the two year period ending June 30, 1948, a total of 4,907 residents of Illinois entered state-aided cancer diagnostic clinics for examination, according to the State Department of Public Health. In this group, 2,004 "proved" cases of cancer were discovered. The state department provides financial assistance to nineteen cancer diagnostic clinics in Illinois. Plans have been approved for a clinic at Aledo on completion of a new hospital there. In addition to free examination service to patients referred by physicians, each of these clinics maintains a free tissue diagnostic service for those who cannot afford the cost. During the two years 3,634 tissue examinations were made. Deaths from cancer in Illinois during the first eight months of this year numbered 9,047.

Chicago

Prize for Research at Cook County Hospital.—The Maurice Lamm Blatt Memorial Fund has announced a prize of $250 for original research done by an intern or resident of the Cook County Hospital or a former intern or resident who has been out of the hospital for not more than five years. All communications should be addressed to the Maurice Lamm Blatt Memorial Fund, Children's Division, Cook County Hospital, Chicago 12.

Annual Meeting of Institute of Medicine.—The annual meeting of the Institute of Medicine of Chicago will be held in the Gold Room of the Congress Hotel December 7, when Dr. Dallas B. Phemister, professor and chairman of the department of surgery emeritus, University of Chicago, will deliver the presidential address on "The Institute of Medicine and the Medical Profession." Mr. Alfred T. Carton, a citizen fellow of the institute, will speak on "The Institute of Medicine and the Community."

Visiting Lecturers.—At the meeting of the Chicago Medical Society November 17, 8 p. m., Dr. R. Arnold Griswold, head of the department of surgery of the University of Louisville School of Medicine, Louisville, Ky., spoke on "Pericardiectomy for the Relief of Constrictive Pericarditis." Dr. Isadore S. Ravdin, professor of surgery at the University of Pennsylvania School of Medicine, Philadelphia, lectured on "General Direction in Which Surgical Science Has Been Going in the Last Ten Years."

Cancer Society Aids Betatron Project.—The American Cancer Society, Inc., has awarded a $20,000 grant to the University of Illinois College of Medicine to implement the school's new betatron project. The grant will be used for the purchase and manufacture of accessory instruments required for accurate operation of the betatron, which will be used for measuring the intensity and quality of roentgen ray beams and for setting up safety devices to protect operators of the betatron. The research studies will be conducted by the department of radiology under the supervision of Dr. Roger A. Harvey.

Illinois Eye and Ear Infirmary Remodeled.—Physical improvements costing almost $100,000 are nearing completion at the Illinois Eye and Ear Infirmary. The improvements have been made by the State Department of Public Welfare to make possible the handling of an increasing number of patients and to provide facilities for an expanding teaching program. More than 87,000 patient visits were made last year to the infirmary, which is staffed by the University of Illinois College of Medicine. Recent improvements include a new suite of operating rooms, two each in the eye, and ear-nose-throat departments. New examination, treatment and waiting rooms have been added as well as laboratories.

INDIANA

Personal.—A community party for Dr. Stanton E. Gordin, Connersville, was held October 15 in the Alquina gymnasium, on his completion of fifty-two years of practice. Persons from surrounding communities attended and took part in the program.

Organize Rheumatism Association.—The Indiana Rheumatism Association has recently been organized in Indianapolis to stimulate interest of physicians and laymen in rheumatic diseases. At the inaugural meeting Dr. James S. Browning, Indianapolis, was elected president and Dr. John S. Schechter, Indianapolis, secretary-treasurer. Physicians of Indiana are invited to make application for membership.

Dermato-Syphilology Foundation Lectures.—A series of meetings in Indianapolis is extending through next May 4 have been scheduled by the Alembert Winthrop Brayton Foundation for Research in Dermato-Syphilology. Dr. Nelson P. Anderson, Los Angeles, opened the series October 20, and was followed by Dr. Arthur C. Curtis, Ann Arbor, Mich., and Dr. Harold Cole, Cleveland. The remaining lectures are as follows: On December 10, Drs. J. Lamar Callaway, Durham, N. C.; Sture Johnson, Madison, Wis., and George M. Lewis, New York, will be at Indianapolis General Hospital for clinical work and discussion. On January 21 and 22 Dr. Donald M. Pillsbury, Philadelphia, will lecture at the university and conduct clinical work at the hospital. Dr. Hamilton Montgomery, Rochester, Minn., will conduct clinics at the hospital February 21. Dr. Francis E. Senear, Chicago, will be at the hospital March 3. A joint meeting of the hospital's department of dermatosyphilology and the Cincinnati Dermatological Society will be held April 6. At the last foundation meeting May 4, Dr. Clinton W. Lane of St. Louis will attend an all day session at the hospital.

MASSACHUSETTS

Biology and Food Technology Laboratory.—A new laboratory building for biology and technology is a part of the $20,000,000 development program announced November 20 by the Massachusetts Institute of Technology, Cambridge. About half of the amount is to be assigned as endowment and unrestricted funds, and the balance will be used for new facilities and equipment. The laboratory will house in a single building the institute's work in biology, nutritional biochemistry and food technology. Under the present conditions various groups contributing to the institute's program in biology and food technology are separated by long distances, and some of the units are housed in temporary facilities inadequate for this type of work.

MISSOURI

Graduate Courses in Pulmonary Diseases.—A graduate course in pulmonary diseases sponsored by the American Trudeau Society in cooperation with the St. Louis University School of Medicine will be given at the University January 17-19. The course has been planned for physicians in general practice. Out of state members of the faculty are Dr. Julius L. Wilson, Tulane University of Louisiana School of Medicine, New Orleans, and Dr. Carl Muschenheim, Cornell University Medical College, New York. Registration is limited and the tuition is $25 payable at time of application. Inquiries should be addressed to the Executive Secretary, Missouri Section, American Trudeau Society, 411 North 10th St., St. Louis 1.

Narcotic Violation.—Dr. William P. Dysart, Columbia, pleaded guilty to violation of the Federal Narcotic Code in the U. S. District Court, Kansas City, and on September 18 sentence was suspended and he was placed on probation for a period of five years, during which he is not to practice his profession.

NEW YORK

Personals.—Dr. Harry A. Pattison, director of the Potts Memorial Institute at Livingston, delivered a group of lectures on "Rehabilitation of the Tuberculous" at Mexico City during the first ten days of November. Doctor Pattison went to Mexico City at the invitation of the Sociedad Mexicana de Estudios sobre Tuberculosis.——Dr. Robert H. Lowe, assistant medical director at Rochester General Hospital, has been appointed director to replace Dr. Frank C. Sutton, who resigned. Dr. Lowe is a graduate of the University of Vermont College of Medicine, Burlington, 1938. He has a master's degree in hospital administration.

Graduate Program.—The Medical Society of the State of New York, in cooperation with the New York State Department of Health, has arranged a program for the Nassau County Medical Society to be given on Thursday afternoons at 4 o'clock at the Nassau Hospital Auditorium, Mineola, as follows:

Dec. 16, William A. Brumfield, Albany, Modern Treatment of Syphilis.
Jan. 27, Richard S. Gubner, Brooklyn, Newer Concepts and Therapy of Hypertension.
Feb. 3, Arthur W. Grace, Brooklyn, Common Parasitic Infections Encountered in General Practice.
Feb. 10, Nathaniel T. Kwit, New York, Management of the Failing Heart.
Feb. 17, Lloyd F. Craver, New York, What Can the General Practitioner Do About Lowering Cancer Mortality?

New York City

Apprehend Shellfish Bootleggers.—Seafaring inspectors of the Bureau of Food and Drugs, Department of Health, who daily pilot rowboats to isolated coves and sandbars in the waters surrounding New York City, have apprehended 619 shellfish "bootleggers" since the beginning of the year and condemned 9,474 pounds of clams, mussels and oysters in their possession. By increasing the number of these inspectors, the bureau has reduced sharply cases of typhoid, dysentery and other intestinal diseases. Only 1 case of typhoid was traced to the eating of unapproved shellfish this year as compared with 690 cases in 1933.

Dr. Blatteis Honored. — Associates and friends of Dr. Simon R. Blatteis, Brooklyn, gave a dinner in his honor at the Waldorf-Astoria celebrating the golden anniversary of his entering the practice of medicine. Dr. Blatteis, a graduate of Bellevue Hospital Medical College, served as pathologist in chief for the New York Department of Health from 1906 to 1918. From 1935 to 1941 he was physician in chief at Jewish Hospital. He served on the staff of New York University Medical College from 1909 to 1940, first as lecturer in medicine, then as clinical professor of medicine. He was named emeritus professor of clinical medicine at the Long Island College of Medicine in 1941, having served on the faculty since 1924.

Lectures in Pathology and Bacteriology. — The Mount Sinai Hospital is sponsoring lectures on "Recent Advances in Pathology and Bacteriology" on Wednesday evenings at 8:30 in the Blumenthal Auditorium. The program is as follows:

Dec. 22, William E. Ehrich, Philadelphia, Functional Significance of Various Leukocytes.
Jan. 12, Paul R. Cannon, Chicago, Changing Aspects of Protein Metabolism.
Jan. 26, William F. Petersen, Chicago, Functional Pathology and the Environmental State.
Feb. 9, Richard H. Follis Jr., Baltimore, Nutrition and Bone Disease.
Feb. 23, Harry Most, New York, Recent Advances in the Epidemiology, Diagnosis and Treatment of Amebiasis.
March 2, Tracy B. Mallory, Boston, Systemic Pathology Consequent to Traumatic Shock.
March 16, Harry Eagle, Bethesda, Md., Mode of Action of Penicillin in Relation to Its Therapeutic Use.
March 30, B. Black-Schaffer, Durham, N. C., Clinical Implications of the Shwartzman Phenomenon.
April 6, Joseph H. Globus, Morphology of Brain Tumors in Relation to Prognosis.

NORTH CAROLINA

Community Built Hospital Opened.—The Valley Clinic and Hospital at Bat Cave, built as a community project to serve the mountain area of Rutherford, Polk and Henderson counties, was dedicated October 10. Built at an actual cash outlay of $11,442 in an abandoned brick school building, the hospital has an estimated value of $65,000. Material was donated, labor was given and supplies provided through a ladies auxiliary and the Hendersonville Elks Lodge. The twelve bed hospital is equipped to do general medical care, surgery and obstetric care. It will have a staff of eight persons. Dr. George F. Bond, a graduate of McGill University Faculty of Medicine, Montreal, Canada, 1945, led in the construction of the hospital.

PENNSYLVANIA

State Medical Election.—At the recent centennial meeting of the Medical Society of the State of Pennsylvania, Dr. Gilson C. Engel, Philadelphia, was installed as president, and Dr. E. Robert Samuel, Mt. Carmel, was chosen president-elect. Dr. Walter F. Donaldson, Pittsburgh, continues as secretary.

Philadelphia

Cancer Program for General Practitioners.—The Committee on Cancer Control of the Philadelphia County Medical Society in cooperation with the Philadelphia Chapter of the American Academy of General Practice is arranging an all day program on cancer detection and control at the society building December 9. Office diagnostic procedures will be stressed, and a panel discussion will be presented of cases representing special types of malignant growths.

Pittsburgh

Dr. Hetherington Goes to Maryland.—Dr. Leon H. Hetherington, assistant professor of medicine at the University of Pittsburgh School of Medicine, has been appointed chief of the division of tuberculosis services of the Maryland State Department of Health. Dr. Hetherington will take over direction of Maryland's four tuberculosis sanatoriums. He is a graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1930, and has been associated with the Tuberculosis League Hospital, Pittsburgh, Pennsylvania State Tuberculosis Sanatorium at Cresson, Western State Psychiatric Hospital, Pittsburgh, and, most lately, with the Veterans Hospital at Butler, Pa., as chief physician for tuberculosis services. Maryland's tuberculosis sanatoriums have been under the direction of the Maryland State Health Department for more than a year, following the retirement of Dr. Victor F. Cullen, Baltimore.

WISCONSIN

Hospital News.—A new 250 bed diagnostic and treatment building is being erected as an addition to the Winnebago State Hospital facilities, Winnebago, to be built at an approximate cost of $3,000,000. It is being constructed under the federal hospital act.

State Medical Election.—The State Medical Society of Wisconsin at its meeting early in October installed Dr. Karl H. Doege of Marshfield as president, and chose Dr. John W. Truitt, Milwaukee, as president-elect. Drs. Stephen E. Gavin, Fond du Lac, and James C. Sargent, Milwaukee, were reelected to serve as delegates to the American Medical Association, with Drs. Lien O. Simenstad, Osceola, and Dexter H. Witte, Milwaukee, reelected alternates.

PUERTO RICO

Annual Meeting of Puerto Rico Medical Association.—The annual meeting of the Asociación Médica de Puerto Rico will be held December 8-12 in Santurce, under the presidency of Dr. Manuel A. Astor, Santurce. Guest speakers include:

Herman G. Weiskotten, Syracuse, N. Y., Financial Support of Medical Schools.
Irving S. Wright, New York, Modern Treatment of Coronary Thrombosis with Myocardial Infarct Including Use of Anticoagulants.
Zacharias T. Bercovitz, New York, Controlled Clinical Experimental Studies in Treatment of Chronic Duodenal Ulcer.
Stanton M. Hardy, New York, Review of Therapeutic Trials of New Chemotherapeutic Compounds.
Leo Meyer, New York, Recent Advances in Hematology.
Louis M. Rousselot, New York, Surgery in Carcinoma of Pancreas.
Oswald S. Lowsley, New York, Prostatectomy.
Bertha A. Klien, Chicago, The Eyeground in Diagnosis of Hypertensive and Renal Disease.
Vane M. Hoge, Washington, D. C., Objectives of the National Hospital Program.
Raymond Hussey, Detroit, Medical Relations in Workmen's Compensation Practice.
John B. Youmans, Chicago, Nutrition and Anemia.
Arthur T. Hertig, Boston, Earliest Stages of Normal and Abnormal Human Development and Their Relation to Fertility and Infertility.
Hobart A. Reimann, Philadelphia, Histoplasmosis: A "New" Disease.
Isaac Costero, México, D. F., Siphilitic Miocarditis.
Donald A. Covalt, New York, Rehabilitation of the Hemiplegic.
Richard K. Richards, Chicago, Progress in the Drug Therapy of Epilepsy.
Abel Gonzalez, Ciudad Trujillo, R. D., Primary Benign Tumor of the Ureter.
N. Puente Duany, Habana, Cuba, Pigmented Basal Epithelioma.

The annual banquet will be held December 12 at the Condado Beach Hotel.

GENERAL

Society Elections.—At the recent meeting of the Central Association of Obstetricians and Gynecologists, Drs. George A. Kamperman, Detroit, became president; Dr. Lawrence M. Randall, Rochester, Minn., was made president-elect; Dr. John I. Brewer, Chicago, was elected secretary-treasurer, and Dr. Harold L. Gainey, Kansas City, assistant secretary.

Assistant Director of the Baruch Committee.—The Administrative Board of the Baruch Committee on Physical Medicine, as of October 27, appointed Dr. Arthur L. Watkins of Massachusetts General Hospital, Boston, assistant director of the Baruch Committee on Physical Medicine. The committee has available additional funds for fellowships in physical medicine, application to be made to the Baruch Committee on Physical Medicine, 597 Madison Avenue, New York 22.

Dr. Papanicolaou Awarded Borden Prize.—Dr. George N. Papanicolaou, New York, received the Borden Prize for outstanding contribution by a faculty member of an American medical college in the field of medical science. Presentation was made at the annual meeting of the Association of American Medical Colleges at White Sulphur Springs, W. Va. Dr. Papanicolaou, a member of the faculty of Cornell University Medical College, New York, since 1914 and now professor of clinical anatomy, won the award for work in developing tests for early detection of cancer.

Southern Psychiatric Association.—The Annual meeting of the Southern Psychiatric Association will be held at the Hotel Adolphus, Dallas, Texas, December 6-7 under the presidency of Dr. Guy F. Witt, Dallas. Guest lecturers include:

George L. Carlisle, Dallas, Minor Psychiatry from the Viewpoint of the Internist.

Ozro T. Woods, Dallas, *Subject to be announced.*

Mr. Arden E. Hardgrove, Louisville, Ky., Financing and Organization of a Psychiatric Department in a General Hospital.

The annual dinner will take place December 6 at 8 p. m.

Report of Nutrition Foundation.—Grants amounting to $185,600 have been made by the Nutrition Foundation, Inc., which was created by the food industry to develop fundamental research in the science of nutrition. Ten new grants were approved at the recent annual meeting of the foundation, and sixteen renewals were made. Among the largest of these, $4,400 went to the University of Chicago for study of enzymatic oxidation of fatty acids in animal tissues; Stanford University, $3,600 annually for three years to study the metabolism of nucleic acids, and the University of Pennsylvania, $3,000 annually for three years to study the significance of nutritional deficiencies in pregnancy.

Nobel Prize Winners.—Paul Müller, Ph.D., of Basle, Switzerland, has been awarded the Nobel Prize in medicine for having discovered the insect-killing power of DDT. While the compound was first synthesized in 1874 by Othmar Zeidler, a German chemist, Müller, a scientist with the J. R. Geigy Company of Switzerland, discovered that a small amount of DDT when combined with a carrier was an effective insecticide.

Professor Arne V. K. Tiselius, a biochemist on the faculty of Upsala University, Stockholm, won the chemistry prize for the invention of two simple and inexpensive instruments known as "Tiselius Apparatus," which have important uses in medicine, biology, industry and chemistry. The apparatus are used for separating the components of a protein compound. Each award is worth $44,000.

Postgraduate Fellowships Available.—The National Foundation for Infantile Paralysis has available postgraduate fellowships in research in virology, orthopedic surgery, pediatrics, epidemiology and neurology. The fellowships are intended to emphasize advanced training in the basic sciences and experience in research, which need not be related to poliomyelitis. Clinical fellowships in physical medicine are also open to physicians who wish to prepare for eligibility for certification by the American Board of Physical Medicine. In the field of public health, fellowships are available for one year of postgraduate study leading to a Master of Public Health degree at a school of public health approved by the American Public Health Association. Application may be made to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5. Selection of candidates will be made on a competitive basis and will be based on the individual need of each applicant.

Vaccination Requirements for Air Travelers to Australia.—According to the U. S. Public Health Service, the Commonwealth Quarantine Act has been amended to provide that all persons arriving by air in Australia must produce a valid vaccination certificate or be vaccinated at the first port of entry and be subjected to surveillance or other restrictions considered necessary. All aliens who apply for visas for Australia and who are to travel by air must produce certificates of vaccination before visas are granted. The Australian Department of Health requires that certificates must (1) be issued or endorsed by a medical officer of a Department of Health of the country to which the certificate was issued; (2) be issued in respect of a vaccination within three years before date of arrival in Australia; (3) indicate that the reaction to the vaccination has been examined by a medical officer; (4) indicate which of the following types of reaction was shown by the examination: (*a*) primary jennerian reaction or typical primary reaction; (*b*) accelerated reaction (vaccinoid); (*c*) reaction of immunity. A certificate stating "No Reaction" will not be accepted.

World Federation for Mental Health.—Representatives of nearly all fifty-five nations of the Third Congress on Mental Health met in London in August and formed the World Federation for Mental Health. Its membership will be composed of professional organizations related to or concerned with mental health. There will be only one voting delegate for each country, regardless of the number of member societies or associations of that country in the federation. All member associations, however, will send representatives as observers to the annual meeting. Officers elected are Dr. J. R. Rees, president, and Dr. Andre Repond of Switzerland, vice president, who will become president. The honorary treasurer is Dr. Frank Fremont-Smith, New York, and the honorary secretary is Dr. Kenneth Soddy, who will have an office at 19 Manchester Street, London W 1, England. The executive board, which includes representatives of all six continents, is made up of Dr. J. D. M. Griffin, Canada; Miss K. Hesselgren, Sweden; Dr. M. K. el Kholy, Egypt; Dr. E. Krapf, Argentina; Dr. K. R. Masani, India; Dr. D. Odlum, Great Britain; Dr. Y. Porcher, France; Professor H. Roxo, Brazil; Dr. H. C. Rumke, Holland; Dr. J. Russell, New Zealand; Dr. George S. Stevenson, United States, and Professor J. Stuchlik, Czechoslovakia. The executive board elected Professor H. C. Rumke of Utrecht as chairman. The world federation offers a means for transnational collaboration on the problems of mental health. Also, through consultative status with various United Nations agencies, such as the World Health Organization and UNESCO, the World Federation may be able to provide a channel to two way communication between the United Nations and the agencies, associations and professions in different countries. This is one reason for asking the various professional associations in the United States to become members of this world federation, as they will soon be invited to do. For information address Nina Ridenour, executive officer, International Committee for Mental Hygiene, 1790 Broadway, New York 19.

CORRECTION

Tachycardia.—In the Buenos Aires letter, in the item "Persistent Paroxysmal Ventricular Tachycardia" THE JOURNAL, Sept. 25, 1948, page 309, the first word, line 8, column 1, should be "delayed" instead of "increased."

Marriages

FRANCIS HANSELL WATT, Thomasville, Ga., to DR. HENRIETTA H. HICKS in Greenwich, Conn.; September 4.

JAMES WALLACE MANKIN to Dr. Dorothea Rights Phipps, both of Atlanta, Ga., in Tampa, Fla., recently.

JAMES JOHNSTON HICKS, Birmingham, Ala., to Miss Joan Ludington Barber at Enterprise, September 21.

SAMUEL WALTHALL BUDD JR., Richmond, Va., to Miss Emilie Grace Mueller of Baltimore, September 18.

JOSEPH F. SCHNEIDER, Fargo, N. D., to Miss Anna E. Anderson of Moorhead, Minn., June 29.

WALTER EUGENE VOGT JR., Jamaica, N. Y., to Miss Marian Ehler in Champaign, Ill., September 18.

SUMNER HOLTZ, Haverhill, Mass., to Miss Barbara Kamberg of Webster Groves, Mo., September 3.

BENJAMIN E. DANIEL, Claxton, Ga., to Miss Frances Ann DeVane at Miami, Fla., September 19.

HERBERT N. HULTGREN, San Francisco, to Miss Barbara Brooke of Pasadena, August 7.

CATHERINE J. CAPORALE, to Robert Goodwin, D.D.S., both of New York, September 11.

DAVID S. MCKEE, Bristol, Va., to Miss Dorothy Nettles at Atlanta, Ga., September 17.

SEYMOUR W. MEYER to Miss Beth Resnick, both of Brooklyn, August 29.

Deaths

Edward Rhodes Stitt ✠ Rear Admiral, U. S. Navy, retired, Washington, D. C., died at the Naval Medical Center, Bethesda, Md., November 13, aged 81. Admiral Stitt was born in Charlotte, N. C., July 22, 1867. He graduated from the University of Pennsylvania Department of Medicine, Philadelphia, in 1889, in which year he was commissioned an assistant surgeon in the medical corps of the U. S. Navy. In 1900 he became a surgeon, in 1917 a medical director with the rank of rear admiral and in 1920 he was appointed surgeon general of the navy, which post he held for two four year terms. His first few years in the navy were spent in routine assignments ashore and afloat, but in 1902 he was selected as instructor of tropical medicine and bacteriology at the newly established Naval Medical School in Washington. He served two tours of duty at the Naval Hospital in Canacao, P. I., first in 1905-1906 as executive officer and later from 1909 to 1911 as medical officer in command, Except for these periods of overseas duty and several months in 1905 spent under the instruction of Sir Patrick Manson at the London School of Tropical Medicine, Dr. Stitt was a teacher at the Naval Medical School, where from 1916 to 1920 he was commanding officer. During World War I he had charge of the laboratory services at various naval stations and hospitals. He served as professor of tropical medicine at the George Washington University, Georgetown University in Washington and associate professor of medical zoology at the University of the Philippines. He lectured on tropical medicine at Jefferson Medical College in Philadelphia. From 1928 until his retirement in 1931 after forty-two years of service, he was inspector of medical department activities in the San Diego Naval District. In 1941 he became consultant on tropical medicine to the Secretary of War. Admiral Stitt was an honorary fellow of the American College of Surgeons, a member of the American Association of Immunologists, Association of American Physicians, American College of Physicians, American Public Health Association, Southern Medical Association and the Royal Society of Medicine. He was past president of the American Society of Tropical Medicine, the National Board of Medical Examiners, of which he had been a member from 1915 to 1929, and a member of the Federal Board of Hospitalization, the executive and central committees of the American Red Cross and president of the board of visitors, St. Elizabeth's Hospital. He was awarded the Theobald Smith Gold Medal of George Washington University, Washington, by the American Academy of Tropical Medicine and in 1942 the Gorgas Medal by the Association of Military Surgeons of the United States, which he had served as president. In 1945 the Richard Pearson Strong Medal and an honorarium of $500 for outstanding service in the field of tropical medicine were presented to him by the American Foundation for Tropical Medicine. The tenth edition of his book, "Practical Bacteriology, Hematology and Parasitology," just off the press, was reviewed in The Journal last week. He was the author also of another well known book, "Diagnostics and Treatment of Tropical Diseases." Admiral Stitt was given honorary degrees of LL.D. from the University of South Carolina, 1917, and the University of Michigan, 1921; Sc.D., Jefferson Medical College, Philadelphia, 1920; Ph.M., Philadelphia College of Pharmacy and Science, 1921, and Sc.D., University of Pennsylvania, 1924. He was awarded the Navy Cross for his service during World War I.

Edward Roland Snader ⊕ Philadelphia; born in Philadelphia Nov. 1, 1895; Hahnemann Medical College and Hospital of Philadelphia, 1921; clinical professor of medicine at his alma mater; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the National Gastroenterological Association; formerly member of the Council of the American Diabetes Association; affiliated with the J. Crozier Homeopathic Hospital, Chester, Allentown (Pa.) State Hospital, William McKinley Memorial Hospital in Trenton, N. J., and Chester County Hospital, West Chester; chief of the metabolic clinic at Hahnemann Hospital; died in Ruperts Islands, Quebec, August 7, aged 52, of coronary disease.

Hulett Judson Wyckoff ⊕ Seattle; born in Arkansas City, Kan., March 7, 1889; Northwestern University Medical School, Chicago, 1916; specialist certified by the American Board of Orthopaedic Surgery, Inc.; member of the American Orthopaedic Association and of the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; served overseas during World War I; on the staffs of the Children's Orthopedic, Seattle General, and Maynard hospitals, and the Firland Sanatorium; active in the work of the Washington State Spastic Children Society; died in Swedish Hospital September 2, aged 59, of carcinoma of the bladder.

Thomas Whitson Rhodes, Ossining, N. Y.; born in Tennessee in 1885; University of the South Medical Department, Sewanee, Tenn., 1908; formerly connected with the New York State Department of Health, health officer of the Quincy, Ill., public health district and health officer of East Liverpool, Ohio; at one time assistant director of the Person-Chatham-Orange health district in North Carolina; served during World Wars I and II; resident physician at Pendleton (Ind.) Reformatory; formerly resident physician at the Elmira Reformatory in Elmira, N. Y.; died in Robert Long Hospital in Indianapolis August 9, aged 63, of internal hemorrhage.

Charles Girault Andrews, San Diego; Memphis (Tenn.) Hospital Medical College, 1902; formerly affiliated with the Indian Service; died September 1, aged 70, of bronchopneumonia.

August Harvey Bauer, Chicago; Rush Medical College, Chicago, 1910; member of the American Medical Association; died September 3, aged 65, of carcinoma of the liver.

Ralph Emerson Bowers, Elizabethton, Tenn.; University of Texas Medical Branch, Galveston, 1948; intern at the Cincinnati General Hospital; died in Asheville, N. C., August 21, aged 26.

Don Ludlow Braddy, Adel, Iowa; State University of Iowa College of Medicine, Iowa City, 1924; died in Veterans Administration Hospital, Des Moines, August 25, aged 49, of cerebral accident.

Fred Braginton ⊕ Hammond, Ind.; Loyola University School of Medicine, Chicago, 1919; an Associate Fellow of the American Medical Association; died in St. Margaret Hospital September 2, aged 86, of cardiac decompensation.

Rome Albert Brock, Athens, Tenn.; Tennessee Medical College, Knoxville, 1901; member of the American Medical Association; for many years county physician; formerly secretary of the McMinn County Medical Society; died recently, aged 71, of pneumonia and chronic nephritis.

Harry Rising Enlow, Chicago; Rush Medical College, Chicago, 1907; died September 21, aged 69, of cardiovascular renal disease.

Walter Blaine Felger, Alhambra, Calif.; Emory University School of Medicine, Atlanta, 1925; died in Denver September 19, aged 58, of leukemia.

Edward James Joseph Finnerty, Eldridge, Calif.; University of Toronto Faculty of Medicine, Toronto, Canada, 1911; affiliated with Sonoma State Home; died recently, aged 59, of coronary occlusion.

Moses Alexander Foil, Mount Pleasant, N. C.; Jefferson Medical College of Philadelphia, 1891; died September 13, aged 85, of hypertensive cardiovascular disease.

Alfred Ludwell Hammer, McGaheysville, Va.; University College of Medicine, Richmond, 1905; member of the associate staff of Rockingham Memorial Hospital in Harrisonburg; died August 19, aged 68, of heart disease.

George Joseph Hanley, Minneapolis; Bellevue Hospital Medical College, New York, 1887; died in Bethesda Hospital, St. Paul, September 16, aged 88, of bronchopneumonia and arteriosclerosis.

George A. Harris, Valley, Neb.; John A. Creighton Medical College, Omaha, 1895; served during World War I; division surgeon for the Union Pacific Railroad for many years; died in Methodist Hospital, Omaha, September 23, aged 77, of cirrhosis of the liver.

William E. Helm, Chicago; National Medical University, Chicago, 1903; died September 29, aged 69, of coronary thrombosis and hypertension.

Russell Brooks Howard ⊕ Louisville, Ky.; University of Louisville School of Medicine, 1927; formerly health officer of Carter County, Tenn.; served during World War II; on the staff of St. Anthony's Hospital; died in St. Joseph's Hospital, Denver, August 15, aged 45, of mesenteric thrombosis.

Elbert Archer Jones, Waban, Mass.; New York Homeopathic Medical College and Hospital, New York, 1892; died August 26, aged 77, of coronary sclerosis.

Edward Winfield Miskall ⊕ East Liverpool, Ohio; Ohio State University College of Medicine, Columbus, 1926; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; past president of the Columbiana County Medical Society; consulting cardiologist of City Hospital, Salem, and on the staff of East Liverpool City Hospital; died August 13, aged 48, of coronary thrombosis.

Marion Rudolph Mobley Jr., Florence, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1944; member of the American Medical Association; on staff of McLeod Infirmary, where he died September 12, aged 26, of acute hepatic insufficiency.

Howard Nelson Moses, Salina, Kan.; Rush Medical College, Chicago, 1899; formerly secretary of the Saline County Medical Society; served during World War I; affiliated with Asbury Hospital; died at St. Luke's Hospital, Kansas City, Mo., September 10, aged 74, of coronary thrombosis.

William Breen Prout ⊕ West Englewood, N. J.; Columbia University College of Physicians and Surgeons, New York, 1923; for many years police surgeon in Teaneck, where he was school physician and head of the child welfare station; on the staffs of the Holy Name Hospital in Teaneck and the Englewood (N. J.) Hospital; died in New York Hospital August 20, aged 50, of pulmonary embolism.

Henry Benjamin Raman, Springfield, Ill.; University of Illinois College of Medicine, Chicago, 1916; served overseas during World War I; on the staff of St. John's Hospital; died September 2, aged 61, of heart disease.

Charles Franklin Rendel, Mexico, Ind.; Medical College of Indiana, Indianapolis, 1905; member of the American Medical Association; died September 1, aged 73, of coronary occlusion.

Eugene Alfred Riccio, Chicago; Marquette University School of Medicine, Milwaukee, 1928; affiliated with St. Anne's and Mother Cabrini hospitals; died in Cicero, Ill., October 3, aged 45, of coronary thrombosis.

Eden T. Riley, Greensburg, Ind.; Medical College of Ohio, Cincinnati, 1895; member of the American Medical Association; served as a member of the city board of health and as county health officer; died recently, aged 80, of pneumonia and diabetes mellitus.

Arthur Jay Roberts ⊕ Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885; an Affiliate Fellow of the American Medical Association; past president of the Jackson County (Mich.) Medical Society; died in Jennings Hospital August 27, aged 89, of lobar pneumonia.

Edward Barker Ross Jr., Clarksville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1912; affiliated with Clarksville Hospital; died August 16, aged 59, of carcinoma of the liver.

Miles Jerome Scott, Batavia, Ohio; University of Cincinnati College of Medicine, 1925; formerly medical director of the Hamilton County Home and Chronic Disease Hospital in Cincinnati; died in Christ Hospital August 14, aged 49, of a skull fracture received in a fall.

Wilmarth Young Seymour, Augusta, Ga.; Yale University School of Medicine, New Haven, Conn., 1913; member of the American Psychiatric Association; an officer during World War I; served on the staffs of various Veterans Administration hospitals; died in Veterans Administration Hospital August 12, aged 69, of arteriosclerosis.

John Samuel Shaffer, Montgomery, W. Va.; Miami Medical College, Cincinnati, 1902; member of the American Medical Association; served during World War I; a member of the Ohio National Guard during the Spanish-American War; died September 12, aged 75, of cystitis and pneumonia.

Edith Estella Shears, Lakeville, Conn.; Cornell University Medical College, New York, 1900; for many years affiliated with the New York Infirmary in New York; died August 17, aged 82, of cerebral hemorrhage.

Moriss Waldmar Sherwood ⊕ Milwaukee; George Washington University School of Medicine, Washington, D. C., 1914; served in the medical corps of the U. S. Naval Reserve during World War II; for many years member of the city safety commission; affiliated with West Side Hospital and Mount Sinai Hospital, where he died August 15, aged 60, of carcinoma of the lung.

Ferdinand Jacob Endres Smith ⊕ Milford, Iowa; State University of Iowa College of Medicine, Iowa City, 1887; an Affiliate Fellow of the American Medical Association; died August 27, aged 86, of cerebral hemorrhage.

Lon Eliab Stage, Bliss, N. Y.; University of Buffalo School of Medicine, 1893; member of the American Medical Association; served during World War I; health officer of the town of Eagle; affiliated with Wyoming County Community Hospital, Warsaw, August 21, aged 79, of coronary thrombosis.

Alexander McLaren Stewart, Naples, N. Y.; Syracuse University College of Medicine, 1903; member of the American Medical Association; served as coroner, health officer and as a member of the school board; affiliated with the Frederick Ferris Thompson Hospital in Canandaigua; died in Canandaigua August 28, aged 73, of arteriosclerosis.

George Elmer Strahler ⊕ Dayton, Ohio; Indiana University School of Medicine, Indianapolis, 1909; died in the Miami Valley Hospital August 26, aged 63, of coronary thrombosis.

Newton Harrell Strickland Jr., Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1945; interned and served a residency at Gorgas Hospital in Ancon, Canal Zone; member of the American Medical Association; served during World War II; on the staff of the Veterans Administration Hospital, where he died August 23, aged 26, of poliomyelitis.

Fred Welch Tavenner, Gas City, Ind.; Indiana University School of Medicine, Indianapolis, 1924; member of the American Medical Association and of the American Association of Industrial Physicians and Surgeons; served during World War I; died recently, aged 57, of coronary occlusion and adenocarcinoma of bladder

Richard W. Taylor ⊕ Villa Grove, Ill.; Chicago College of Medicine and Surgery, 1914; for many years county coroner and district surgeon for the Chicago and Eastern Illinois Railroad; died August 19, aged 69, of coronary occlusion.

Walter Albert Taylor, Trenton, N. J.; Jefferson Medical College of Philadelphia, 1904; member of the American Medical Association; served during World War I; on the staff of Mercer Hospital, where he died August 21, aged 68, of sarcoma of the hip.

James Walter Thomas ⊕ Lincoln, Neb.; John A. Creighton Medical College, Omaha, 1910; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staffs of Bryan Memorial, St. Elizabeth and Nebraska Orthopedic hospitals; died in La Jolla, Calif., August 23, aged 60, of angina pectoris.

Stanley Bishop Thomas, Brooklyn; McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1903; member of the American Medical Association; fellow of the American College of Surgeons; served during World War I; for many years on the staff of St. John's Hospital, where he died September 6, aged 70, of cerebral hemorrhage.

William Osgood Tuck, Plymouth, Ill.; Chicago Medical College, 1891; died in St. Francis Hospital, Macomb, August 21, aged 82, of arteriosclerosis.

Samuel O. Turbett, Detroit; the Hahnemann Medical College and Hospital, Chicago, 1888; died August 18, aged 85, of arteriosclerosis.

Clarence Walthall Twitty ⊕ Newton, Ga.; Atlanta School of Medicine, 1912; died in the Piedmont Hospital, Atlanta, July 20, aged 69, of aneurysm of the basilar artery.

Natividad Villalobos, Mandaluyong, Rizal, P. I.; University of Santo Tomas College of Medicine and Surgery, Manila, 1933; affiliated with National Psychopathic Hospital; died August 28, aged 39, of heart failure, following a severe attack of asthma.

Milton Emanuel Wagner, McClure, Pa.; Medico-Chirurgical College of Philadelphia, 1906; died September 2, aged 68, of cardiorenal disease.

Eugene Henry Walet ⊕ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1896; past president, vice president and secretary of the Orleans Parish Medical Society, serving as a member of the board in 1904, 1908 and 1913; formerly on the faculty of the Loyola Post-Graduate School of Medicine; affiliated with Touro Infirmary, Charity Hospital and Hotel Dieu; died August 10, aged 77, of carcinoma of the colon.

Robert B. Watts, Wellington, Mo.; Kansas City Medical College, 1894; member of the American Medical Association; died September 25, aged 84, of coronary thrombosis.

William P. S. Webb, Rockingham, N. C.; Medical College of the State of South Carolina, Charleston, 1897; member of the American Medical Association; died in Moore County Hospital, Pinehurst, September 6, aged 73, of heart disease.

William Everett Whiteside ⊕ Parsons, W. Va.; Hospital College of Medicine, Louisville, Ky., 1906; served during World War I; past president of the Barbour-Randolph-Tucker Counties Medical Society; died August 30, aged 72, of heart disease.

David Hudson Wright ⊕ Berry, Ala.; Vanderbilt University School of Medicine, Nashville, 1908; died in Jefferson Hospital, Birmingham, August 24, aged 67, of coronary occlusion.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 30, 1948.

Excessive Demands on the National Health Service

The British Medical Association has taken the unusual course of announcing in the newspapers that it is gravely disturbed by reports reaching it from all parts of the country to the effect of the new Health Service on the work and income of doctors. As a result of the Act, many doctors are overwhelmed with work because of the greatly increased public demand. In spite of being fully occupied, many doctors find it impossible to meet their commitments. The British Medical Association is preparing a report on the whole position for presentation to the Ministry of Health. An official of the association has stated in the press: "What will happen in the winter should there be an epidemic of any sort? The feeling of the profession is that if this was the case doctors would not be able to give either the time or adequate treatment to patients. Mr. Bevan has appealed twice in public speeches recently for the public to use the new Health Service with reasonable discretion." Mr. Bevan might be told that the root of the evil in his promise to the public of so many good things to be had without any payment. A charge, even a small one, according to people's means, would be more effective than any appeal by him. A concrete example of what occurs under the free National Health Service was recently given in the medical press. A woman quite legitimately brought her infant for treatment. When that treatment was completed she turned and said: "Doctor, now that I am here I think that I should like a bottle of medicine for myself."

In other directions the demands on the National Health Service are proving excessive. A man who has a tooth beginning to be carious and requiring filling is told by the dentist that he cannot have an appointment for 3 weeks. Millions of spectacles—more than can be supplied—are in demand because they can be had for nothing. The same applies to hearing aids and trusses and other appliances which are free to all.

The Doctors' First Payment from the National Health Service

The doctors have received their first quarterly payments in respect to the National Health Service with some disappointment, as they are less than was expected. It was arranged that doctors should be paid at the capitation rate of $4.50 per annum for each person who signed on their lists. This would have given a quarterly rate of over $1, but in most districts the payment was distinctly less. For this several explanations were given. In the first place, the first four days of July were not included, as they came before the day appointed for the inauguration of the service. In the second place, the executive councils, being still doubtful of their final commitments, erred on the side of caution in making their first payments. A more serious disappointment, because it is not a matter of finance which can be adjusted in later payments, is that doctors who before July 5 had a high proportion of private patients have suffered a severe loss, as the number of persons joining the scheme is greater and therefore the number remaining as possible private patients is fewer than was expected. The service has been accepted by many who previously paid doctors' bills and were looked on as a permanent clientele.

Another trouble is the basic salary of $1,200, which was proposed by the Minister of Health but rejected by the British Medical Association, as the thin end of the wedge for converting doctors into salaried officials. It was finally agreed that the basic salary should be paid only to doctors who asked for it and who would, therefore, receive a lower capitation fee. It now turns out that more doctors are asking for it than are being allowed it. It comes out of the local pool from which capitation fees are paid. The more doctors with small practices (for whom it is intended), the less the capitation fees left for those paid entirely by them.

OSLO

(From Our Regular Correspondent)

Nov. 10, 1948.

The Secretary-General of the Norwegian Medical Association

About 95 per cent of all the doctors in Norway are members of the Norwegian Medical Association. Its sustained and vigilant defence of the interests of the medical profession has wrung from an opponent the reluctant admission that it is "the strongest trades union in the country." In 1925 Dr. Jörgen H. Berner, who was born in 1883, was appointed secretary-general of the association. He retires at the end of 1948, having reached the age limit, and having seen the membership of the association rise from about 1,300 to about 2,900. A watchdog in his position has to bark often and bite when necessary. The Germans, when they occupied Norway in 1940, hoped to find in Dr. Berner a tail-wagging watchdog. Dr. Berner's tail refused to wag. So he was clapped into prison for six weeks. A brief spell of liberty, and he was again in prison, this time for thirteen months, evidently incurable from the German point of view. Dr. Berner's interest in the history of medicine has found expression in his study of legislation against infectious diseases in Norway in the past—a work for which he was awarded the King's Gold Medal in 1922. Dr. Odd Bjercke, who succeeds Dr. Berner on Jan. 1, 1949, was born in 1909. With a background of general practice, or organization and administration (he has been chairman of the Association of Junior Doctors and a member of the secretariat of the Government's central health service) he can surely be relied on to bark on the right occasions and bite when necessary.

A Geographic Survey of Gastroduodenal Ulcer

On October 13, at the University of Oslo, Dr. Kaare Schanke successfully defended his M.D. thesis of 203 printed pages. It bears the title: "The Behavior of Gastric and Duodenal Ulcer in a Fishing District in the North of Norway." This study was planned in 1939 and its execution was started in the summer of 1940 with the object of analyzing the ulcer material of the Stokmarknes Hospital in the North of Norway in the last prewar decade. During Christmas of 1940 the hospital archives were entirely destroyed by fire. Was this destruction a loss or a gain? At all events, Dr. Schanke was undaunted, and between July 1, 1941, and Dec. 31, 1944, he made a careful clinical study of practically all the cases of gastroduodenal ulcer in a district of more than 40,000 inhabitants in this period. His 178 male and 54 female cases convinced him that (1) the ulcer rate is remarkably high among the fisher folk in the North of Norway and (2) gastric ulcer is far more common than duodenal ulcer in this area, whereas the reverse is the case in most other areas including the United States, where duodenal ulcer has been found to be twelve to thirteen times as common as gastric ulcer. Why this difference? Dr. Schanke has no crisp and ready made answer to this question or to many others, and his honesty in this respect must lead to the impression among some at least of his readers that our attitude toward gastroduodenal ulcer today is as groping as it was toward phthisis before the discovery of the tubercle bacillus.

Correspondence

SULFONAMIDE COMBINATIONS

To the Editor:—Our experience with combined sulfonamide therapy leads us to believe that Drs. Garb and Janoff, in their letter of October 2, underestimated the advantages of this method of administering sulfonamide compounds. During the past three years we have compared a sulfadiazine-sulfamerazine combination and several triple sulfonamide combinations with sulfadiazine alone with or without sodium bicarbonate. A definite reduction in the frequency with which sulfonamide crystals were encountered in urine occurred when the double combination replaced sulfadiazine. When triple combinations were used, crystals of sulfonamide drug were seldom encountered. Administered in this form, the triple combinations were as effective as sodium bicarbonate used in amounts sufficient (12 to 24 Gm. daily) to raise the p_H of urine to 7.1 or higher. In earlier studies p_H 7.1 was found to represent the critical p_H of urine above which sulfonamide crystals seldom occurred. Administration of sodium bicarbonate in these amounts does not appear to be deleterious in most patients, but may cause gastrointestinal irritation and, more serious, may have undesirable effects in patients with diminished renal or cardiac reserve. Large amounts of alkali lower the blood levels of sulfonamide compound, and for these and other reasons it is important to have available an alternative.

Garb and Janoff, in computing the gain in solubility derived from a sulfadiazine-sulfamerazine combination, use for purposes of calculation an output of 6 Gm. of acetylated sulfonamide compound. This is an exceedingly high figure. When 6 Gm. of sulfadiazine or sulfamerazine is administered only two thirds, roughly, reappears in the urine. Most of the remainder is not absorbed from the gastrointestinal tract, although a little may may be converted to nonreacting products in the body. Of the 4 Gm. absorbed, only 10 to 50 per cent is acetylated, so that the total amount of acetylated sulfadiazine will vary roughly between 0.4 and 2.0 Gm. daily. If from these amounts one subtracts the 0.57 Gm. calculated by Garb and Janoff to represent the gain in solubility at p_H 5.5 achieved by addition of sulfamerazine, the solubility is now sufficient to maintain all of the acetylated sulfonamide compound in solution at the lower output range, and to decrease markedly the supersaturation at the higher outputs. Addition of a third sulfonamide compound to the combination will further the gains by at least one half.

If Garb and Janoff's statements were descriptive of actual conditions, one would expect a large mass of acetylated sulfonamide compound to crystallize from urine acid in reaction. Instead, a diligent search is commonly required to find even a few crystals in freshly voided specimens, and the greater part of excreted sulfonamide compound remains in solution in many specimens. However, crystals will form on standing at 37.5 C.; hence a portion of the sulfonamide compound is maintained in supersaturated solution. Therefore, even a slight gain in solubility may delay crystallization to a significant extent and so represent a benefit inadequately described by calculations based on solubility equilibriums. Obviously, the degree of supersaturation is much less when two or more sulfonamide compounds are present.

Therapeutic trial of a sulfadiazine-sulfamerazine combination in experiments soon to be published indicated small but significant superiority of the combination over sulfadiazine alone used in treatment of pneumonia. At present we believe that sulfonamide combinations offer several established advantages and that the objections offered as yet have not had sufficient merit to preclude this type of sulfonamide medication.

John G. Reinhold, Ph.D.
Harrison F. Flippin, M.D.
Philadelphia.

PROTEIN HYDROLYSATE THERAPY

To the Editor:—In the August 7 issue of The Journal, page 1289, there appeared an article entitled "Evaluation of Protein Hydrolysate Therapy for Peptic Ulcer," by Dr. Edward E. Woldman and his associates.

The excellent and detailed studies done by the authors warrant their concluding paragraph, in which they state, "Protein hydrolysate is of value only as a food but has little value as a therapeutic agent for peptic ulcer."

Several years ago, when we first used protein hydrolysate therapy for peptic ulcer, we noticed a decrease in the free hydrochloric acid of the gastric content which we attributed partially to acid-binding property of the hydrolysate. It was also our impression that the bad taste of the protein hydrolysate decreased or possibly completely inhibited the cephalic phase of gastric secretion. In subsequent studies of patients with peptic ulcer a lowering of gastric acidity was observed only when distasteful foods were used in the dietetic management. An adequate diet to which was added some distasteful food invariably produced a decrease in gastric acidity. These studies were temporarily discontinued during the war period. It is important to note that Dr. Woldman and his associates administered the protein hydrolysate by tube feedings. A comparative study utilizing the oral route of administration of protein hydrolysates to evaluate further the effect of their bad taste on the cephalic phase of gastric secretion might reveal a greater decrease in free acidity than demonstrated by these authors.

These authors also demonstrated that protein hydrolysate feedings delayed the gastric emptying time considerably. They quoted Thomas and Cridor as having concluded "That there is an inhibition of gastric motility when the end products of protein digestion are placed in the upper part of the small intestine." This diminution of gastric motility and activity perhaps more than the probably heretofore overestimated degree of acid reduction by protein hydrolysate may account for the reported favorable results of protein hydrolysate therapy in peptic ulcer.

The effect of protein hydrolysates in decreasing gastric motility and their incomplete diminution of gastric acidity might be regarded as a form of "medical vagotomy." Further search for more effective medical measures in the therapy of peptic ulcer still remains essential.

Irving Gray, M.D.,
Milton J. Matzner, M.D.,
Brooklyn.

IRRADIATION OF SPLEEN AND PITUITARY FOR CONTROL OF PUBERAL BLEEDING

To the Editor:—In the April 10, 1943 issue of The Journal you published my paper on "Irradiation of the Spleen and Pituitary for Control of Puberal Bleeding," which I read before the joint meeting of the Section on Obstetrics and Gynecology and the Section on Radiology at the American Medical Society's meeting in June 1942.

I stated then, "Treatment of the spleen and pituitary offers a readily available and effective method for treating puberal bleeding without direct irradiation of the ovaries, thus removing any fear of possibly adverse effect on the result of future pregnancy."

In this article I presented the case of a young girl who was treated for puberal bleeding, who married and gave birth to a normal baby girl. I am now able to report subsequent follow-up in this case. She now has 3 normal children, the first a girl, born in February 1942, the second a boy born in April 1945 and the third a girl born in October 1946.

This substantiates my statement, that when irradiation is properly administered no harm ensues to the mother or offspring subsequently born to her.

Ira I. Kaplan, M.D., New York.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropractic Practice Acts: Right of Examining Board to Adopt Rules Adding to Statutory Requirements.—This was a consolidation of five separate actions against the State Board of Chiropractic Examiners to determine whether or not the board had power to enact rules imposing more stringent requirements and restrictions on applicants for license than those enumerated in the law itself. From judgments in favor of all the plaintiffs the defendant appealed to the district court of appeal, first district, division 2, California.

The initiative act which created the chiropractic board authorized the board, among other things, "To adopt from time to time such rules and regulations as the board may deem proper and necessary for the performance of its work, copies of such rules and regulations to be filed with the Secretary of State for public inspection. . . . To do any and all things necessary or incidental to the exercise of the powers and duties herein granted or imposed." In conformity with these provisions the board adopted, in 1944, rule 17(*a*) which provides in part: "(*a*) The required number of academic hours of attendance in any Chiropractic School or College in the State of California will be four thousand (4,000) for all students matriculating after March 1, 1944." At the same time rule 17(*c*) was adopted, reading as follows: "(*c*) All students shall have at least fifty (50) per cent vision and hearing, and no major physical defects."

The statute, said the court, prescribes a schedule of "minimum" educational requirements prerequisite to examination for license to practice covering a course of "not less" than 2,400 academic hours. This was enacted in 1922. The defendant board in 1944, by rule, increased the required number of academic hours to 4,000. It cannot be argued, said the court, that the defendant board acted arbitrarily or unreasonably in demanding this additional education. To the contrary, it would be more reasonable to say that it would have been deficient in its duties as an agency concerned with the public health and welfare if it had neglected to so act. It is a fair and reasonable interpretation of the statute that it was intended to permit the board to take cognizance of existing conditions so as to provide more efficient treatment of the sick and that it was with such purpose in view that the statute fixed the "minimum" requirements and gave to the board the power to enact rules "proper and necessary for the performance of its work." If this is not a proper interpretation of the statute, then we can see no reason for the use of the word "minimum" in the statute. The plaintiffs argue that the statute was enacted to relieve the chiropractors from the unreasonable control of the medical board, but that does not explain the use of the word "minimum." If the purpose was to fix a schedule of educational requirements which no board or agency could exceed, then the proper word would have been "maximum." But in fixing a "minimum" schedule the meaning expressed in the clear language of the statute is that "at least" such hours of instruction were required, and thus it was left open to the board to require additional instruction either in the same subjects of study specified in the statute or in such new or additional subjects as the board might determine. For these reasons the judgments in the four causes based on the additional educational requirements cannot be sustained.

In the other case which was consolidated herewith, the question was as to the validity of rule 17(*c*), requiring all students to have at least 50 per cent vision and hearing and no major physical defects. The trial court declared such rule to be unenforceable, and the plaintiffs contend that such ruling is correct on the ground that the board was without power to adopt the rule and that the question of reasonableness of the rule is not open to discussion. With this, said the court, we do not agree. The question of power is answered in what has been said heretofore. Since the rule is applicable to all those seeking license to practice, it is clearly within the powers of the board. No provision of the statute fixes physical qualifications. The rule is therefore not in conflict with the statute, and the only question debatable is whether it is unreasonable, arbitrary or capricious. The effect of the plaintiff's argument is that the board is without power to deny a license to one who is totally blind, deaf or without arms or hands or to one who is confined in a state penitentiary or mental institution. The unreasonableness of this possibility negates the contention that the statute does not authorize the defendant board to forestall the absurdities by appropriate rules and regulations.

Accordingly the judgment of the trial court in all of the cases consolidated was reversed, with the holding that the board of chiropractic examiners was authorized to enact rules imposing requirements and restrictions on applicants for license above or in excess to those enumerated in the initiative act creating the chiropractic board.—*Hunt v. State Board of Chiropractic Examiners, 196 P. (2d) 77 (Calif., 1948).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I & II.* Various Centers, Feb., June and Sept. 1949. *Part II.* April, 1949. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2, Pa.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc.: *Written.* July 15. Various locations. Final date for filing application is April 15. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Avenue, New York 27.

American Board of Internal Medicine: *Oral.* San Francisco, Feb. 8-10, 1949. New York City, March 23-25. Final date for filing application is Jan. 2. Philadelphia, June 1-3. Final date for filing application is Jan. 2. *Written.* Oct. 17, 1949. Final date for filing application is May 1. Asst. Sec.-Treas., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 1949 Final date for filing application is Jan. 1949 Sec., Dr W. J. German, 310 Cedar Street, New Haven, Conn

American Board of Ophthalmology: *Written.* Jan. 14. *Oral.* San Francisco, March 21-24; New York, June 11-15; St. Louis, Oct. 15-19; Boston, Dec. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Obstetrics and Gynecology, Inc.: *Oral.* Chicago, May 8-14. Final date for filing application is April 1. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsurgh 6.

American Board of Orthopedic Surgery. *Part I.* Various Centers, April and May. Final date for filing application is Dec. 31. Sec., Dr. Francis M. McKeever, 1136 W 6th St., Los Angeles 14.

American Board of Otolaryngology: New York, May 11-14; Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Boston, April. Final date for filing application is March 1. Sec., Dr. Robert A. Moore, 507 S. Euclid Ave., St. Louis 10, Mo.

American Board of Pediatrics: St. Louis, Feb. 18-20. Baltimore, April 22-24. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Rd., Rosemont, Pa.

American Board of Physical Medicine: Atlantic City, June 4-5. Final date for filing application is March 15. Sec., Dr. R. L. Bennett, Georgia Warm Springs Foundation, Warm Springs, Ga.

American Board of Plastic Surgery. Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo

American Board of Psychiatry and Neurology: *Oral.* May. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March 1949. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology. Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 28-30, 1949. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

Alaska:* Juneau, March 1. Sec.-Treas., Dr. W. M. Whitehead, Box 140, Juneau.

Arkansas:* Little Rock, June 9-10. Sec., Dr. L. J. Kosminsky, Texarkana.

Colorado:* Denver, Jan. 4-7. Final date for filing application is Dec. 18. Sec.-Treas., Dr. W. W. King, 831 Republic Bldg., Denver 2.

Connecticut:* Hartford, March 8-9. Secretary to the Board, Dr. Creighton Barker, 258 Church Street, New Haven.

Delaware: *Examination.* Dover, Jan. 11-13. *Endorsement.* Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia:* *Reciprocity.* Washington, Dec. 13. Sec., Dr. George C. Runland, 4130 Municipal Bldg. East, Washington.

Georgia: *Examination.* June, Atlanta and Augusta. *Reciprocity.* Atlanta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O. San Francisco, Calif.

Hawaii: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 10-12. Dir., Bureau of Occupational Licenses, Miss Estella S. Mullner, State House, Boise

Illinois: Chicago, Jan. 11-13. Superintendent of Registration, Mr. Fred W. Ruegg, State House, Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

Iowa:* *Examination.* Des Moines, Dec. 6-8. *Endorsement.* Des Moines, Dec. 6. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 15-16. Sec., Board of Medical Registration & Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 13-15. Sec., Dr. Bruce Underwood, 620 S 3rd St., Louisville 2.

Louisiana: *Examination.* New Orleans, Dec. Sec.-Treas., Dr. R B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12. *Homeopathic Examination.* Baton Rouge, subject to call. Sec., Dr. F. H. Hardenstein, 715 Pere Marquette Bldg., New Orleans.

Maine: Portland, March 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Maryland: *Examination.* Baltimore, Dec. 14-17. *Endorsement* At the discretion of the Board. Sec., Dr Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination* Baltimore, Dec. 7-8 Sec., Dr. J. A Evans, 612 W 40th St., Baltimore.

Massachusetts: *Examination.* Boston, March 8-11. Sec., Dr. George L. Schadt, 413 E. State House, Boston.

Minnesota:* Minneapolis, Jan. 18-20. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Building, St. Paul.

Mississippi: *Reciprocity.* Jackson, Dec. 6 Exec. Officer, State Board of Health, Dr. Felix J. Underwood, Jackson.

Montana: Helena, April 4-6. Sec., Dr. O. G. Klein, First National Bank Building, Helena.

Nebraska:* *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Building, Lincoln 9.

Nevada: Carson City, May 2. Sec., Dr. G. H. Ross, 112 N. Curry Street, Carson City.

New Hampshire: Concord, March 10. Sec., Board of Registration in Medicine, Dr John S Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, June 21-24. Sec., Dr. E. H. Hallinger, 28 West State Street, Trenton 8.

New Mexico: Santa Fe, April 11-12. Sec., Dr. V. E. Berchtold, 141 Palace Ave., Santa Fe.

New York: *Examination.* Various Centers, Feb 1-4. Sec., Dr. J. L. Lochner, Jr., 23 S. Pearl St., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 17. Sec., Dr. Ivan M. Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-7. Act. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination* Columbus, Dec. 13-15. Sec., Dr. H. M. Platter, 21 W Broad St., Columbus

Oregon:* *Examination.* Jan. 5-7. Final date for filing application is Dec. 22, 1948. *Endorsement.* Jan. 21-22. Final date for filing application is Jan. 3. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, Jan. 1949. Act Sec., Mrs M G Steiner, 351 Education Bldg., Harrisburg

Puerto Rico: *Examination.* Santurce, March 1. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

Rhode Island:* *Examination.* Providence, Jan. 6-7. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

South Carolina: *Endorsement.* Columbia, Dec. 6. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Pierre, Jan. 18-19. Sec., Dr. G. J Van Heuvelen, Capitol Bldg., Pierre.

Tennessee:* *Examination.* Memphis, Dec. 22-23. Sec., Dr. H. W. Qualls, 1635 Exchange Building, Memphis 3.

Utah: *Examination.* Salt Lake City, July. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Vermont: *Examination.* Burlington, Feb. Sec., Dr. F. J Lawliss, Richford

Virgin Islands: *Examination.* Charlotte Amalie, Dec. 8-9. Comm., Dr. Christian R. Moorhead, Charlotte Amalie.

Washington:* Seattle, Jan Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

West Virginia: Charleston, Jan. 3-5. Sec., Public Health Council, Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

Wisconsin:* Madison, Jan. 11-13, 1949. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls, Wis.

Wyoming: *Examination.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Feb. 21-26. Sec.-Treas., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona. *Examination.* Tucson, Dec. 21. Sec., Mr. Francis A. Roy, University of Arizona, Tucson.

Connecticut: New Haven, Feb. 12. Exec. Asst., State Board of Healing Arts, Miss Mary G. Reynolds, 110 Whitney Ave., New Haven 10.

District of Columbia: *Examination.* Washington, April 18-19. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg., East, Washington.

Florida: *Examination.* Gainesville, June 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Iowa: *Examination.* Des Moines, Jan. 11. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor & Detroit, Jan. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Jan. 4-5, April, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

Oklahoma: Spring of 1949. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. Sec., Basic Science Examining Committee, Dr. C. D. Byrne, Univ. of Oregon, Eugene.

Rhode Island: *Examination.* Providence, Feb. 9. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Stattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

Medical Motion Pictures

FILM REVIEWS

The following 16 mm., color, silent, motion picture was prepared in 1947 and is procurable on loan from Philip Thorek, M.D., 25 East Washington Street, Chicago 2.

The Surgical Treatment for Splenic Flexure Carcinoma with Solitary Liver Metastasis. 900 feet, (3 reels), showing time thirty-nine minutes.

The film shows the surgical management of an obstructing carcinoma of the splenic flexure with a solitary liver metastasis. A preliminary cecostomy is made to decompress the colon followed, in several weeks, by a resection of the primary lesion and the solitary liver metastasis. A primary end to end anastomosis of the colon is performed. The cecostomy is closed three weeks after resection of the obstructing neoplasm.

Reel 1 shows the case history, physical findings, radiologic studies and technic for performing the cecostomy. The cecum is exteriorized through a modified McBurney's incision. The anatomy involved in the making of the incision is well captioned and illustrated. Gauze is placed between the cecum and abdominal wall to stimulate adhesions. Two Babcock clamps are placed on the exteriorized portion of the cecum and taped to skin to help prevent it from slipping back into the abdomen. The cecostomy is opened in twenty-four hours, and a mushroom catheter is inserted into the large bowel.

Reel 2 illustrates the resection of the primary lesion and liver metastasis. The incision used is not shown, but according to the author is the same as that used and described in his film for vagotomy. If the making of the incision were included, the teaching value of the film would be improved. The primary lesion is widely resected and the continuity of the bowel reestablished by an end closed anastomosis. The arterial supply to the colon in this region is well demonstrated.

The metastasis and a small portion of surrounding normal tissue are removed from the left lobe of the liver. Previously placed interrupted mattress sutures controlled the bleeding very well. The raw surface of the liver is covered by sheets of oxycel gauze, which are held in place by sutures. No attempt is made to close the defect in the liver.

The final stage, closure of the cecostomy, is shown in the third reel. The bowel is carefully dissected from the abdominal wall and the edges of the cecostomy trimmed and then closed. The cecum is replaced in the abdominal cavity.

The surgical technic is good and the tissues are handled gently. The operative field is not obscured by the operator's hands.

This film can be recommended for showing to groups of general surgeons, residents, interns and senior medical students. Generally speaking, photography is good except for a few sequences which are out of focus. The titles are clear. There is evidence that the camera was hand held. Blue drapes were substituted for white drapes about half-way through the film.

Perforated Ulcer. 16 mm., color, silent, 300 feet, showing time twelve minutes. Prepared in 1948 by Howard G. Reiser, M.D.; David S. Fox M.D., and Hilger P. Jenkins, M.D., The Division of Surgery, The Woodlawn Hospital, Chicago. Procurable on loan from Hilger P. Jenkins, M.D., The Woodlawn Hospital, Chicago.

This film is designed chiefly to supplement a conference or lecture on perforated ulcer. No attempt is made to tell the complete story as to such aspects as etiology, diagnosis, treatments, prognosis and complications. It shows the nature of the condition as seen at the operating table and at autopsy. The surgical technic used in repairing the perforations and the pathology are well demonstrated.

The film can be recommended as an adjunct to a lecture or conference on perforated ulcer to general surgeons, residents, interns and medical students. The purpose of the film is excellent, and the idea could be well adapted to many other subjects.

Photography is good except for a few scenes in which a better camera angle would have afforded a clearer view of the subject, in which the surgeon's hands obstructed the surgical field.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

18:523-592 (July) 1948

Diffuse Platelet Thromboses with Thrombocytopenia and Hemolytic Anemia (Thrombotic Thrombocytopenic Purpura). E. E. Muirhead, G. Crass and J. M. Hill.—p. 523.

Intragroup Incompatibility Due to hr″ Factor. A. S. Wiener and H. R. Peters.—p. 533.

Antithrombin Activity of Stored Plasma. M. Stefanini.—p. 537.

Azoospermia and Aspermia. O. J. Pollak.—p. 542.

*Comparison of Sensitivity of Methods Used for Detection of Carbon Monoxide in Blood. Helen I. Wikoff and Gwendolyn B. Carson.—p. 548.

Rapid Method for Estimation of Blood Sugar. J. Kleeberg.—p. 551.

Methods for Detection of Carbon Monoxide in Blood.—Wikoff and Carson found that human blood must contain carbon monoxide in a saturation of at least 4 per cent before the presence of carbon monoxide can be established by qualitative laboratory tests. Pyrotannic acid and 1 per cent tannic acid (which is used in Wetzel's test) are the reagents most sensitive to the presence of carbon monoxide in human blood. The Hartridge Reversion Spectroscope will detect a concentration of 8 per cent saturation, but blood must be at least 30 per cent saturated before carbon monoxide can be detected with an ordinary biologic spectroscope.

American Journal of Pathology, Ann Arbor, Mich.

24:729-946 (July) 1948

Effect of Patent Ductus Arteriosus and of Intra-Auricular and Interventricular Septal Defects on Development of Pulmonary Vascular Lesions. K. J. Welch and T. D. Kinny.—p. 729.

*Fulminating Meningococci Infections and So-Called Waterhouse-Friderichsen Syndrome. J. H. Ferguson and O. D. Chapman.—p 763.

Cytologic Studies with Phase Microscope: III. Alterations in Nuclei of "Resting" and Dividing Cells Induced by Means of Fixatives, Anisotonic Solutions, Acids, and Alkali. H. U. Zollinger.—p. 797.

Experimental Argyrosis: IV. Morphologic Changes in Experimental Animal. C. T. Olcott.—p. 813.

Observations in Guinea-Pigs Following Injection of Specific Hematopoietic Substances Derived from Beef Liver. L. M. Meyer and A. Sawitsky.—p. 835.

Pathology of Gargoylism: Report of Case and Review of Literature. Lotte Strauss.—p. 855.

*Studies on Periarteritis Nodosa: III. Differentiation Between Vascular Lesions of Periarteritis Nodosa and of Hypersensitivity. Pearl M. Zeek, C. C. Smith and J. C. Weeter.—p. 889.

Congenital Alveolar Dysplasia of Lungs. E. MacMahon.—p. 919.

Adenomatoid Tumors of Fallopian Tube. A. B. Ragins and R. D. Crane.—p. 933.

Fulminating Meningococcic Infections.—Ferguson and Chapman say that whenever the incidence of Neisseria meningitidis infections approaches epidemic proportions there is an increase in fulminating fatal infections. The progress of the disease in these cases is so rapid that death commonly occurs within twelve to twenty-four hours. The presenting clinical picture is frequently one of pharyngitis and fever and sometimes gastrointestinal symptoms, followed by the rapid development of widespread petechiae, cyanosis, peripheral vascular collapse and death. This condition has come to be known as the Waterhouse-Friderichsen syndrome, with collapse and sudden death supposedly produced as the result of massive bilateral hemorrhage into the adrenal glands. In the past few years the authors have had the opportunity of studying 16 cases of acute fulminating meningococcic infection in which autopsies were done. N. meningitidis was recovered from cultures of either blood or cerebrospinal fluid, or both, in each case. The pathologic changes found at autopsy in these cases support the view that the presenting clinical syndrome is the result of an overwhelming bacteriemia and toxemia. From this series it would appear that massive bilateral adrenal hemorrhage is only an associated lesion and is not responsible for the clinical picture presented. Cases having the same clinical syndrome show no great destruction of adrenal cortical substance. The authors believe that the term Waterhouse-Friderichsen should be discontinued.

Periarteritis Nodosa and Hypersensitivity.—Zeek and her associates point out that recent literature contains frequent reference to lesions which resemble periarteritis nodosa and which occur in certain cases of hypersensitivity to various substances, especially to the sulfonamide compounds. Their own studies on necrotizing panarteritis have revealed cases of two types. One type is associated with hypersensitivity. In this report the lesions of this condition are called hypersensitivity angiitis, both arteries and veins usually being involved. The term periarteritis nodosa is retained for the other type. The authors studied in rats the various stages in the development of experimentally produced lesions of periarteritis nodosa, from the time of their initiation until fifty-two weeks later. Similar lesions were found in each of 15 cases in man. Seven other cases in man which were associated clinically with hypersensitivity presented vascular lesions of a different type and distribution. Periarteritis nodosa can be differentiated from hypersensitivity angiitis by (1) the morphologic characteristics of early preexudative lesions, (2) the distribution of the lesions in relation to the bifurcation of vessels, (3) the size and type of vessels primarily affected and (4) the presence or absence of lesions in splenic follicular arterioles and in the arteries of the pulmonary circulation.

Annals of Surgery, Philadelphia

127:769-1104 (May) 1948. **Partial Index**

Aneurysm Following Surgical Procedures: Report of 5 Cases. D. C. Elkin.—p. 769.

Endometriosis. J. V. Meigs.—p. 795.

Clinical Evaluation of Cholangiograms. H. Hagan and H. L. Townsend.—p. 810.

Acute Cholecystitis. J. W. Barksdale and J. H. Johnston.—p. 816.

*Clinical Evaluation of Cherney's Incision. J. C. Burch, H. T. Lavely and C. F. Bradley.—p. 830.

"Wet Lung"—Experimental Study: I. Effects of Trauma and Hypoxia. R. A. Daniel Jr. and W. R. Cate Jr.—p. 836.

Facial Paralysis Supported with Autogenous Fascia Lata. J. B. Brown, F. McDowell and M. P. Fryer.—p. 858.

Preservation and Restoration of Mandibular Function and Contour. L. T. Byars.—p. 863.

Prolapse of Gastric Mucosa: Report of 6 Cases. I. A. Ferguson.—p. 879.

Mesenteric Vascular Occlusion. J. D. Rives, L. H. Strug and I. M. Essrig.—p. 887.

Enterogenous Cysts of Duodenum: Report of Case. W. L. Peple.—p. 912.

Jejunal Diverticulosis Complicated by Development of Jejuno-Colic and Jejuno-Jejunal Fistulas: Report of Case. C. Williams and L. H. Bosher Jr.—p. 918.

Diploic Epidermoid and Extra-Dural Pneumatocele Cranial Defects and Deformity. J. E. J. King.—p. 925.

Anatomic Observations on Lumbar Sympathetics with Evaluation of Sympathectomies in Organic Peripheral Vascular Disease. G. H. Yeager and R. A. Cowley.—p. 953.

Effects of Priscol (2-Benzyl-4, 5-Imidazoline HCl) on Peripheral Vascular Diseases, Hypertension and Circulation in Patients. K. S. Grimson, F. A. Marzoni and J. O. Hendrix.—p. 968.

Carcinoma of Breast. W. P. Nicolson Jr. and E. D. Grady.—p. 992.

Familial Polyposis and Carcinoma of Colon. W. L. Estes Jr.—p. 1035.

Low Anterior Segmental Resection With or Without Colostomy. C. W. Mayo and R. S. Smith.—p. 1046.

Surgical Treatment of Peptic Ulcer: Comparison of Results of Gastro-Enterostomy, Gastric Resection and Vagotomy at Duke Hospital. C. E. Gardner Jr. and D. Hart.—p. 1056.

Surgical Treatment of Obstructive Lesions of Esophagus. J. M. Mason.—p. 1067.

Cherney's Incision.—Burch and his co-workers demonstrate that Cherney's modification of Bardenheuer's incision offers advantages for the execution of difficult interventions deep in the pelvis. The incision is made in a curvilinear fashion beginning from 1 to 2 fingerbreadths below and medial to the anterosuperior iliac spine, crossing the midline, running almost straight and just within the hairline, and terminating below the iliac spine of the opposite side. The peritoneal cavity is entered laterally and the incision is carried across 1 to 2 fingerbreadths above the reflection of the vesical peritoneum. The peritoneal incision usually extends from one inferior epigastric artery to the other. There is no contraindication to dividing one or both arteries. Curarization is an aid in overcoming any difficulty in the closure. Two-thirds of the 60 cases in which the authors used the incision involved gynecologic operations. While ordinary gynecologic operations do not require the wide exposure provided by this incision, in the more difficult cases the incision is a distinct advantage. Three of the patients had carcinoma of the cervix and were submitted to radical hysterectomies. These, as well as the 1 case of calculus in the lower part of the ureter, illustrated the desirability of the incision for exposing the ureter in its terminal portion. In low cervical and extraperitoneal cesarean section, the exposure of the lower uterine segment is accomplished more easily with this than with the customary vertical incision. There were 2 cases of carcinoma in the rectosigmoid and 1 case of diverticulitis in the same region, in which resection and anastomosis were done at or below the peritoneal reflection. The anastomoses were easily done. There were no deaths and remarkably few complications. There were no wound infections. All wounds were securely healed and in satisfactory condition on the patient's discharge from the hospital. This usually occurred on the ninth postoperative day. In no instance has wound weakness or herniation been noted.

Archives of Pathology, Chicago

45:271-424 (March) 1948

Chronic Infection and Atherosclerosis: Some Additional Experimental Data. N. W. Jones and A. L. Rogers.—p. 271.
Fat Necrosis of Newborn: Report of Case with Necrosis of Subcutaneous and Visceral Fat. C. M. Flory.—p. 278.
Histopathology of Virus Encephalomyelitis. I. M. Scheinker.—p. 289.
Pathologic Changes Produced by Monochloromonobromomethane. B. Highman, J. L. Svirbely, W. F. von Oettingen and others.—p. 299.
Experimental Coronary Sclerosis: I. Medial Degeneration as Primary Lesion in Coronary Sclerosis of Cockerels. J. C. Paterson, S. J. Slinger and K. M. Gartley.—p. 306.
Barbiturate-Opiate Intoxication with Necrosis of Basal Ganglions of Brain: Report of Case. G. A. Jervis and F. T. Joyce.—p. 319.
Effect of Choline in Prevention of Experimental Aortic Atherosclerosis. A. Steiner.—p. 327.
*Studies on Megakaryocyte: I. Normal Granulopoiesis of Megakaryocyte. E. Schwarz.—p. 333.
Id.: II. Deficient Granulopoiesis in Megakaryocyte in Essential Thrombopenic Purpura. E. Schwarz.—p. 342.
*Pathologic Anatomy of Acute Experimental Beryllium Poisoning. J. K. Scott.—p. 354.
Intracellular Inclusion Bodies in Mild Disease of Respiratory Tract. C. De Berardinis.—p. 360.
Splenomegaly. D. Symmers.—p. 385.

Normal Granulopoiesis of Megakaryocyte.—Schwarz demonstrates that granulopoiesis begins in the megakaryoblast in a well defined, distinct area, for which the term "functional area" is proposed. The "functional area" is located near the indentation of the nucleus, at the site of the archoplasm. By concentric and continuous expansion it gradually involves the entire cytoplasm with the exception of a narrow border zone, which remains free of granulation. The granulopoiesis is monocentric. Granulopoietic foci independent of the primary area apparently never develop. The position and the growth of the "functional area" kept the nucleus in an eccentric position. Nuclear structures do not visibly participate in the formation of the granules.

Granulopoiesis in Megakaryocyte in Thrombopenic Purpura.—Schwarz presents the case of a woman, aged 25, who had had symptoms of hemorrhagic diathesis since her sixteenth year. The diagnosis of Werlhof's disease had been made repeatedly. Summarizing the detailed studies on this case of chronic essential thrombopenic purpura, in which the megakaryocytes showed exceptional changes, the author says that hyalinization and absence of the azurophilic granulation were the pathologic features. The changes were followed from their beginning in the megakaryoblast throughout the development of the megakaryocyte. The changes were not due to a degenerative process but corresponded to a functional disturbance of granulopoiesis. The progressive stages of the disorder are in full agreement with those of normal granulopoiesis as it was analyzed in the foregoing paper. The observed disturbance cannot be ascribed to a splenic factor or to damage caused by a toxin. A deficiency of substances necessary for granulopoiesis may be responsible. Consequently, "essential" thrombopenic purpura divides into three types: (1) the common type with preserved granulopoiesis and partial influence of a splenic factor; (2) a type of functional failure of granulopoiesis, probably in the nature of a deficiency; (3) a type with degenerative or destructive changes of cytotoxic origin.

Pathologic Anatomy of Beryllium Poisoning.—According to Scott two types of human illness have appeared where workers have been exposed to beryllium compounds: "acute pneumonitis" and "chronic pulmonary granulomatosis" (delayed chemical pneumonitis). The experimental work reported has to do mostly with the changes occurring in tissues after inhalation of hydrated beryllium sulfate ($BeSo_4.4H_2O$) and after intravenous and intraperitoneal administration of the substance. The lesions occurring in various organs after administration of beryllium sulfate were focal necrosis of the liver, tubular epithelial necrosis of the kidney and degenerative changes of the hemopoietic system. The local effects of beryllium sulfate were studied only on the eyes and the respiratory tract in rats, mice, guinea pigs, hamsters, rabbits and dogs which had inhaled a beryllium sulfate dust six hours daily for eleven days. The median particle size was approximately 4 microns, and the concentration of the dust was approximately 88 mg. per cubic meter of inhaled air. Guinea pigs and dogs showed the most extensive and frequent ocular changes. The lungs of all the animals showed histologic changes; in guinea pigs the lesions were few and not diffuse; in rabbits they were more widespread and frequently involved most of one or more lobes. An inflammatory exudate has been found in the lumens of the terminal bronchi in all species. Superficial ulceration of bronchial epithelium was frequently present and was accompanied by bronchial epithelial proliferation. In some species there was pulmonary edema.

Archives of Physical Medicine, Chicago

29:391-444 (July) 1948

Effects of Occlusion with Various Pressures on Blood Flows in Lower Extremities. Jean C. Terrier, K. G. Wakim and F. H. Krusen.—p. 391.
Coordinated Program of Physical Therapy and Occupational Therapy in General Hospital Physical Rehabilitation Program. M. K. Newman and Harriet Barbara Jewett.—p. 395.
Progress in Use of Ultraviolet Radiations. W. T. Anderson Jr.—p. 402.
*Present Status of Fever Therapy. W. Bierman.—p. 408.
Construction, Calibration and Use of Thermocouples for Measuring Body Temperature. W. W. Tuttle and C. D. Janney.—p. 416.

Present Status of Fever Therapy.—Bierman shows that the development of antibiotics has greatly reduced the necessity for the use of physically induced fever in the treatment of gonorrhea. Fever still has a place in the treatment of drug-resistant infections. Combined with chemotherapy, it is valuable in the treatment of syphilis of the central nervous system, and by itself it is of value in syphilitic infections of the eye. It is useful in the treatment of arthritis, brucellosis and Sydenham's chorea. It is claimed to be of value in the therapy of anterior poliomyelitis and malignant growths when combined with roentgen radiation. Meperidine hydrochloride is said to be the best form of sedation during the administration of fever. Plasma vitamin A and carotene levels become depressed during the administration of physically induced fever. Elevation of body temperature has a delayed inhibitory influence on spermatogenesis. In rabbits, fever causes a reduction of antibody titers and occasionally of the complement contained in the serum. It increases phagocytosis. Myelinated nerve fibers of the rabbit can be damaged by high temperatures.

Arizona Medicine, Phoenix

5:1-112 (July) 1948

"What of the Future?" H. W. Kohl.—p. 25.
*Pulmonary Resection for Pulmonary Tuberculosis. W. S. Conklin.—p. 28.
Obstetric Activities in Small General Hospital: Comparisons and Comments on Lessening Maternal Mortality. C. E. Yount and C. E. Yount Jr.—p. 35.
Relationship of Neurology to Psychiatry. B. J. Alpers.—p. 40.
Phlebothrombosis, Present Status of Diagnosis and Treatment. R. A. Price.—p. 45.

Pulmonary Resection for Pulmonary Tuberculosis.—Conklin reviews observations on 42 patients who underwent resection for pulmonary tuberculosis. In 13 pneumonectomies there were 4 operative deaths and 2 late deaths from progression of the disease. Of 7 patients still living 2 have had empyema (1 with fistula), and 1 has had a slight progression of disease, which has been clearing under treatment with streptomycin. All 7 have negative sputum and are considered improved. In 29 lobectomies there were 3 operative deaths and 3 late deaths from progression of the disease. Of 23 patients still living 2 have had empyema (1 with fistula), 1 had a postoperative spread of the disease and 8 have had evidence of late reactivation of preexisting lesions. Three of the 42 patients had postoperative spread of the disease and 2 of those are dead. Thirteen have had late reactivation, exacerbation or progression of preexisting lesions. Of these, 4 are dead. Nine of the 13 are living and are considered improved, the sputum being negative in 7. Of 33 living patients 27 had negative sputum at the time of the most recent examination. In 4 of the living patients, however, the ultimate prognosis is poor. The author gained the impression that the morbidity and mortality associated with resection for pulmonary tuberculosis are still too high. Resection cannot be considered as a therapeutic procedure to supplant the various forms of collapse therapy which have been shown to be relatively safe and effective. There are cases, however, which collapse therapy cannot control, and for some of these resection may provide the only means to cure.

California Medicine, San Francisco

69:1-88 (July) 1948

Experimental Portacaval Anastomosis. R. E. Gardner, F. H. Leeds and N. E. Freeman.—p. 1.
Streptomycin Therapy of Tuberculosis. S. M. Farber and H. R. Eagle.—p. 6.
Physician's Point of View on Regional Organization of Hospitals. J. W. Cline.—p. 12.
X-Ray Diagnosis and Therapy in Arthritis. M. F. Godfrey.—p. 16.
Acute Central (Hypopyon) Ulcers of Cornea. P. Thygeson.—p. 18.
Benadryl and Pyribenzamine in Treatment of Diseases of Skin. G. Morrow.—p. 22.
Standards for Diagnosis of Activity and Inactivity in Rheumatic State. H. Rosenblum.—p. 25.
Treatment of Superficial Fungus Infections in Routine Dermatologic Practice. R. B. Rees.—p. 28.
Evaluation of Infertility Factors. E. W. Overstreet.—p. 32.
Surgical Operations on the Aged. J. N. Nichols.—p. 36.
Present Status of Female Sterilization Technics in the United States. R. J. McNeil and A. N. Webb.—p. 39.
Diagnosis of Scleroma. O. B. Pratt, M. G. Levine and R. E. Hoyt.—p. 47.

Streptomycin Therapy of Tuberculosis.—Farber and Eagle state that streptomycin is indicated in the following conditions: laryngeal and endobronchial tuberculosis, miliary tuberculosis, tuberculous meningitis, osseous tuberculosis, tuberculous lymphadenitis, sinuses and fistulas, and exudative tuberculous pulmonary lesions not responsive to conservative therapy. Streptomycin may have a place as a palliative medication in genitourinary tuberculosis and tuberculous enteritis. It is desirable to limit the use of streptomycin to these types of tuberculosis for the following reasons: 1. Streptomycin is a toxic drug. When the disease process is severe, the prognosis grave and use of streptomycin indicated the toxicity hazard is not too great, but when the disease process can be controlled by other measures or when streptomycin has shown little promise in similar cases, the toxicity hazard cannot be taken lightly. 2. After prolonged treatment with streptomycin, tubercle bacilli frequently become resistant to it. This resistance is prolonged, and a return of sensitivity has not been reported. Therefore the drug may become totally ineffective at a later date when the indication for its use is more urgent. Streptomycin is merely an adjunct to the treatment of tuberculosis. In the concentrations obtained in the blood, the drug is only bacteriostatic. The killing of tubercle bacilli and healing of lesions must be accomplished by the immune mechanisms of the body, and the patient should be given all the supportive measures of modern tuberculosis therapy.

Diagnosis of Activity and Inactivity in the Rheumatic State.—According to Rosenblum the course of rheumatic fever varies widely. One cycle may appear to end in a few weeks, leaving no obvious sequel; another may overwhelm the patient and quickly cause death; still another may be one of a number of recrudescences characterized by arthritis, fever and advancing cardiac damage. The clinical picture most often witnessed includes recurrences of symptoms and signs alternating with periods of apparent quiescence, especially in the earlier age group. Thus, the diagnosis "rheumatic fever" is clinically inadequate unless it takes into account the concept of activity and inactivity. The material which forms the basis for this paper is drawn from experiences with patients in the Naval Service (1942 to 1946), in the diagnostic clinics sponsored by the California State Board of Public Health and the Heart Division of the California Tuberculosis and Health Association, in hospital teaching wards and in private practice. Acute carditis is the most important, the most frequent and the most destructive manifestation of rheumatic activity. It is recognized by tachycardia, variability in heart sounds, rapid increase in cardiac size, cardiac insufficiency and acute pericarditis. Nodules and erythema marginatum are both closely identified with active rheumatic fever. Chorea is practically synonymous with rheumatic fever. Pneumonitis, acute bronchitis and acute pleurisy occurring in a rheumatic patient are highly suggestive of rheumatic activity if combined with other signs of activity, but not in the absence of other signs. When migratory polyarthritis occurs in a known rheumatic person it can be taken as presumptive evidence of activity. Fever in rheumatic patients is ordinarily present during the beginning of a rheumatic cycle. The sedimentation rate is characteristically elevated in acute phases of rheumatic fever. If roentgenoscopy reveals sudden enlargement of all or part of the heart, acute carditis is present. In the electrocardiogram auriculoventricular block is indicative of rheumatic carditis. Activity will be found more frequently in the younger age groups, particularly children, for then the disease is most active and severe, and recurrences are more common than they are after puberty. Of 700 children who were referred to a special clinic for the diagnosis of rheumatic fever, only 545 had received adequate study for a final diagnosis. Of these 399 had rheumatic fever or rheumatic heart disease, and, of the rheumatic group, 110 were considered to have active disease and 289 inactive.

Endocrinology, Springfield, Ill.

43:1-70 (July) 1948

Periodicity in Body Temperature and Heart Rate. N. Kleitman and A. Ramsaroop.—p. 1.
Influence of Diet upon Nephrosclerosis, Periarteritis Nodosa and Cardiac Lesions Produced by "Endocrine Kidney." H. Selye and Helen Stone.—p. 21.
Adrenal Autotransplants with Hepatic Portal Drainage in Rat. E. O. Butcher.—p 30.
*Effects of Thiouracil Feeding on Resistance to Low Environmental Temperature. B. H. Ershoff.—p. 36.
Comparative Parenteral Thyroxine-Like Activity of Natural and Synthetic Thyroproteins Studied with Goiter Prevention Method. E. Frieden and R. J. Winzler.—p. 40.
Modified Turbidimetric Method for Assay of Hyaluronidase. G. H. Warren, J. G. Durso and N. R. Levin.—p. 48.
Effects of Pituitary and Non-Pituitary Gland Factors on Formation of Intracellular Colloid Droplets in Thyroid Epithelium of Hypophysectomized Rats. S. Dvoskin.—p. 52.

Thyroid and Low Temperature.—Adult female rats were made hypothyroid by thiouracil feeding, and their length of survival was determined under cold room conditions with and without thyroxin administration. Rats made hypothyroid by thiouracil feeding failed to survive on exposure to a low environmental temperature. Length of survival under these conditions averaged 5.7 days (range 3 to 7 days). One hundred per cent survival over a 28 day period was obtained in animals similarly treated but administered thyroxin.

Georgia Medical Association Journal, Atlanta

37:243-288 (July) 1948

*Preoperative Treatment for Gallbladder Surgery. T. N. Freeman Jr.—p. 243.
Functional Disturbances of Large Bowel. C. W. Hock.—p. 245.
Pyloric Obstruction: Correlation of Clinical Histories and Roentgen Observations. A. G. Singer Jr.—p. 248.
Polyps of Colon—Their Origin and Growth. J. S. Atwater.—p. 251.
Pyelography as Aid to Differential Diagnosis of Upper Abdominal Masses. C. Eberhart and D. E. Beard.—p. 265.

Preoperative Treatment for Gallbladder Surgery.—Freeman stresses that the condition of the liver bears a direct relationship to the morbidity and mortality in surgery of the gallbladder. Damage to the liver is most apt to be present in the group in which the gallbladder disease has been of long standing. Since there is no reliable test that will indicate slight damage to the liver, the author suggests that the surgeon assume that damage to the liver is present in cases of prolonged gallbladder disease. The author advises that crude liver extract be administered and that the patients be hospitalized for dietetic control for two weeks prior to the surgical treatment.

Journal of Nutrition, Philadelphia

36:1-186 (July) 1948. **Partial Index**

Experimental Rat Caries: I. Production of Rat Caries in Presence of All Known Nutritional Essentials and in Absence of Coarse Food Particles and Impact of Mastication. R. F. Sognnaes.—p. 1.
*Toxicity of Flours Treated with Various "Improving" Agents. J. L. Radomski, G. Woodard and A. J. Lehman.—p. 15.
Prolongation of Life Span of Rats by Bulk-Formers in Diet. A. J. Carlson and F. Hoelzel.—p. 27.
Total Specific Dynamic Action of High-Protein and High-Carbohydrate Diets on Human Subjects. N. Glickman, H. H. Mitchell, E. H. Lambert and R. W. Keeton.—p. 41.
Nature of Supplementary Value of Proteins in Milled Corn Meal and Milled Wheat Flour with Dried Food Yeasts. B. Sure.—p. 59.
Self Selection of Diet: VIII. Appetite for Fats. E. M. Scott and Ethel L. Verney.—p. 91.
Energy Expenditure of 9- to 11-Year-Old Boys and Girls (1) Standing Drawing and (2) Dressing and Undressing. Clara Mae Taylor, Orrea Florence Pye and Ann Barman Caldwell.—p. 123.
Biological Value of Meat Hydrolysate in Infant. A. A. Albanese, L. E. Holt Jr., Virginia I. Davis and others.—p. 133.
Relation Between Starvation, Metabolic Acidosis and Convulsive Seizures in Rats. Virginia D. Davenport and H. W. Davenport.—p. 139.
Biological Values of Six Partially Purified Proteins. Estelle E. Hawley, J. R. Murlin, E. S. Nasset and T. A. Szymanski.—p. 153.

Toxicity of Flours Treated with Improving Agents.—Radomski and his co-workers describe experiments with "agene"-treated flour and bread made from it. The improving agent, known as "agene," is defined as 1 per cent nitrogen chloride in air saturated with water vapor. The purpose of treatment with "agene" is to alter the baking characteristics of freshly milled flour, thereby rendering it immediately usable in modern baking equipment and eliminating the necessity of prolonged storage. Bread made from "agene"-treated flour produces fright fits in dogs. Flours treated with benzoyl peroxide, chlorine, chlorine dioxide and bromate are harmless to dogs when fed for six weeks. The ED_{50} (the amount of a substance which produced an effect in 50 per cent of the animals) of gluten "saturation treated" with nitrogen chloride is approximately 3.5 Gm. per kilogram. Rabbits are of the same order of sensitivity to "agene"-treated gluten as dogs and can be used as assay animals. Cats are also sensitive but less so, while rats and Rhesus monkeys are apparently resistant so far as the production of gross symptoms is concerned.

New England Journal of Medicine, Boston

239:213-244 (Aug. 5) 1948

Traumatic Necrosis of Pretibial Muscles. C. Pearson, R. D. Adams and D. Denny-Brown.—p. 213.
*Nodular Goiter and Thyroid Cancer. T. J. Anglem and M. L. Bradford.—p. 217.
*Penicillin in Treatment of Diphtheria and Diphtheria Carrier State. J. D. Crawford.—p. 220.
Surgery of Elephantiasis of Scrotum of Filarial Origin. C. E. Towne.—p. 223.
Chemotherapy of Neoplastic Disease. I. Methods of Approach. D. A. Karnofsky.—p. 226.
Carcinoma of Pancreas, with Extension to Stomach, Transverse Colon, and Spleen, with Metastases to Retroperitoneal Lymph Nodes, Lungs and Kidney.—p. 231.
Malignant Lymphoma (Stem-Cell Type), with Involvement of Nasopharynx, Air Sinuses, Left Orbit, Base of Skull, Retroperitoneum, Left Testicle, Left Kidney and Pancreas. Extradural Abscess, Right Middle Fossa.—p. 234.

Nodular Goiter and Thyroid Cancer.—*Anglem and Bradford* report that of 363 patients with single nontoxic adenoma of the thyroid 33 (9 per cent) had thyroid cancer. This high incidence of cancer makes obligatory the removal of all single thyroid nodules. The incidence of cancer (9) in nontoxic multinodular goiters (187) is sufficiently low (4.8 per cent) so that the authors concede that the propriety of operating on all such patients might be questioned if there were not other compelling reasons why the growth should be removed. Multinodular goiter is not a simple benign process, but a progressive disease that goes on, first, to develop toxicity in a significant percentage of cases as indicated by the increasing incidence of toxicity as one ascends the age scale. Secondly, it produces serious mechanical disturbance, chiefly by compression and deviation of the trachea by retrotracheal, substernal and intrathoracic extension. The mortality from operations that can be classed as prophylactic is virtually zero. The incidence of complications in operations on this class of patient is insignificant, compared with the hazards of leaving the goiter.

Penicillin in Diphtheria.—Crawford treated with penicillin 97 patients who were admitted to a U. S. Army Station Hospital in Berlin for diphtheria or the diphtheria carrier state during the period of July to December 1946. For comparison the results of the treatment with penicillin are reported along with those obtained in treating 50 patients during the same epidemic but in the six previous months when penicillin was not used as part of the routine treatment. Forty-five patients with acute pharyngeal diphtheria were immediately given a single average dose of 60,000 units of diphtheria antitoxin and in addition were started on three hourly doses of 20,000 units of penicillin (40,000 units in cases of more severe disease). Penicillin was continued for seven days (fifty doses) or longer if the pharyngeal mucosa was not entirely healed. In comparison with the 50 patients who were not given penicillin, the average length of hospitalization was cut from fifty-seven to forty-five days. In 2 patients serious cardioneurologic symptoms developed, and 1 patient had minor symptoms of this type as compared with 3 and 9 respectively in the control series. There were no deaths, while there were 3 deaths in the controls. The average period of hospitalization dropped from sixty-one to forty-three days. Only three patients were held beyond the six weeks' minimum because they continued to harbor virulent organisms in the nasopharynx, while 29 were held beyond this minimum in the control group, a reduction from 57 to approximately 8 per cent. Fifty-two carriers were treated with penicillin, 44 of whom received an initial course of penicillin, consisting of 20,000 units every three hours for fifty doses. The carrier state was terminated in 37 cases, or 87 per cent. Six of the "penicillin failures" and 7 previously untreated patients were subjected to tonsillectomy, only 1 patient remaining a carrier after this procedure. Penicillin is a valuable adjunct in the treatment of diphtheria and the diphtheria carrier state, but it does not supplant the use of antitoxin in the acute stage or obviate the necessity for surgical treatment in a selected group of carriers.

New York State Journal of Medicine, New York

48:1535-1646 (July 15) 1948

Dynamic Therapeutics in Chronic Disease. H. A. Rusk.—p. 1579.
Advantages of Service Contract for Low-Income Subscribers. M. J. Goodfriend.—p. 1583.
Benefits Offered by Voluntary Nonprofit Medical Care Plans of New York State. C. E. Wertz.—p. 1585.
Differential Diagnosis of Pulmonary Lesions. S. B. Clark.—p. 1587.
Success with Oral Mercurial Diuretic. H. A. Solomon and A. Abraham.—p. 1593.
Tolerance Studies of Antihistamine Drug Thephorin. L. J. Boyd, J. Weissberg and T. H. McGavack.—p. 1596.
Rectal Polyps Showing Early Malignant Transformation. H. Peskin.—p. 1599.
X-Ray Injuries: Preventable Occupational Hazard. Shirley J. DeVoe and G. M. Corney.—p. 1601.
Severe Diabetic Acidosis with Extreme Low Carbon Dioxide Combining Power. J. C. Watts, A. J. Aptaker and J. R. Reuling.—p. 1603.
Photosensitization Therapy of Acne Vulgaris. A. Kurtin and R. Yontef.—p. 1606.
Value of Urography in Elucidation of Nonurologic Complaints. A. K. Swersie.—p. 1607.

Ohio State Medical Journal, Columbus

44:801-864 (Aug.) 1948

Cholinergic Episodes and States in Human: I. Deductions from Occurrence of Systemic Cholinergic Reactions from Typhoid Vaccine. R. D. Barnard.—p. 801.
Streptococcal Infections and Scarlet Fever. P. L. Harris.—p. 812.
Amebic Abscess in Student Veteran: Report of Case. F. R. Moore and E. H. Hudson.—p. 814.
Report of 4 Cases of Granuloma Inguinale Treated with Streptomycin. L. M. Mason and A. L. Welsh.—p. 816.
Ovarian Disgerminoma with Report of 2 Cases. J. A. Spencer and P. J. Reel.—p. 817.
Bilateral Ovarian Dermoid Cysts Complicating Pregnancy. H. Reitman.—p. 819.
Early Diagnosis of Dacryocystitis and Congenital Glaucoma. C. S. Perry.—p. 821.
Effect of Streptomycin on Eighth Nerve Function. W. F. Hulse.—p. 822.
Rupture of Solitary Cyst of Liver. C. R. Lulenski.—p. 824.
Psychiatric Units in General Hospitals. J. D. O'Brien.—p. 826.

Pennsylvania Medical Journal, Harrisburg

51:947-1072 (June) 1948

Surgical Treatment of Jejunal Ulcer. J. T. Priestly.—p. 961.
Roentgen Studies of Thoracic Tumors. H. P. Doub.—p. 968.
Clinical Training in Diagnosis and Treatment of Cancer. A. O. Whipple.—p. 976.
Program for Control of Tuberculosis in Pennsylvania. M. C. Stayer.—p. 982.
Emergency Medical Service. W. E. Flannery.—p. 985.
Fate of the Allergic Child. H. A. Slesinger.—p. 988.
Frequency of Hysterectomy for Benign Uterine Disease. H. D. Lafferty.—p. 993.

Philippine Journal of Surgery, Manila

3:55-108 (March-April) 1948

*Blood Bilirubin Determinations as Aids in Differentiating Chronic Gall Bladder Disease and Peptic Ulcer. R. J. Navarro and P. C. Campos.—p. 55.
Incarceration of Six-Month Gravid Uterus: Report of Case. J. T. Mendoza.—p. 60.
Surgical Consciousness in Peptic Ulcer. P. T. Nery and R. R. P. Villasor.—p. 64.
Report on 80 Cases of Ablatio Placenta. A. Baens and Gloria Tancinco-Yambao.—p. 73.
Benign Giant-Cell Tumor of Bone: Report of Second Case Treated by X-ray Radiation 6 Years Ago. P. S. Chikiamco.—p. 80.
Surgical Exposure of Kidney. D. Antonio Jr.—p. 85.

Blood Bilirubin in Differentiation of Gallbladder Disease and Peptic Ulcer.—Navarro and Campos point out that it is often necessary to resort to numerous, long and tedious laboratory examinations before it can be said that a case is either one of chronic gallbladder disease or peptic ulcer. They present 4 cases which illustrate the difficulty encountered in the differentiation. In all of them the clinical history and physical findings at the time of admission gave little suggestion of a possible chronic hepatobiliary condition. A careful perusal of the histories inevitably led to peptic ulcer as the first consideration. The persistent presence of bilirubin in blood and urine, however, was a factor which suggested some hepatobiliary disorder. Subsequent developments confirmed the presence of chronic gallbladder disease. The authors have encountered a number of similar cases, but the 4 reported are especially representative. They admit that their studies on the value of bilirubin determination in the differential diagnosis of peptic ulcer are still too limited to make sweeping conclusions.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

68:225-420 (June) 1948. Partial Index

Activation of Prothrombin by Platelets Plus Globulin. J. H. Milstone.—p. 225.
Rickettsiostatic Action of Crystalline Penicillin Fractions in Embryonate Eggs. D. Greiff and H. Pinkerton.—p. 228.
Distribution of Radioactive Carbon Administered as Carbonate in Body and Excreta of Mature Rat. W. D. Armstrong, J. Schubert and A. Lindenbaum.—p. 233.
Fractionation of Serum Cholesterol. J. C. Forbes, G. H. L. Dillard, W. B. Porter and O. Peterson.—p. 240.
Infectivity of Murine SK Strain of Poliomyelitis Virus. E. W. Schultz and S. C. White.—p. 266.
Purified Human Poliomyelitis Virus: Infectivity for Cynomolgus Monkeys. C. S. Stulberg, E. A. Slater, Helene P. Brumfield and H. O. Halvorson.—p. 282.
Effect of Adrenal Cortical Extract in Hypertensive Subjects. K. L. Pines, G. A. Perera, Katherine Vislocky and Ann D. Barrows.—p. 286.
Chemotherapy of Joint Involvement in Mice Produced by Streptobacillus *moniliformis*. Jennie S. Levey and S. Levey.—p. 314.
Carcinogenic Effect of Sulfonamides. A. T. Haerem.—p. 330.
*Relative Efficacy of Emetine in Intestinal and Hepatic Amebiasis L. B. Parmer.—p. 362.
Therapeutic Activity of Bacitracin in Rabbit Syphilis, and Its Synergistic Action with Penicillin. H. Eagle and R. Fleischman.—p. 415.

Emetine in Intestinal and Hepatic Amebiasis.—Parmer found that injection of emetine into rabbits was followed by a relatively high drug concentration in the liver for more than a month, whereas the level in the intestine was always much lower and became undetectable after four days. The high concentration and prolonged presence of emetine in the liver and a low concentration and transient presence of the drug in the intestine are suggested as the explanation for the efficacy of emetine in amebic disease of the liver and the drug's failure in amebic intestinal disease in man.

Radiology, Syracuse, N. Y.

51:1-154 (July) 1948

Roentgen Diagnosis of Rickets Associated with Other Skeletal Disease of Infants and Children. R. S. Bromer and R. M. Harvey.—p. 1.
Progressive Diaphyseal Dysplasia. E. B. D. Neuhauser, H. Schwachman, M. Wittenborg and J. Cohen.—p. 11.
Obstruction of Alimentary Tract in Infancy. W. A. Evans Jr.—p. 23.
*Fibrocystic Disease of Pancreas. L. S. Goin.—p. 36.
Roentgen Appearance of Chest in Diseases Affecting the Peripheral Vascular System of Lungs: I. Conditions Associated with Increased Vascular Permeability. R. P. Barden and D. A. Cooper.—p. 44.
*Pulmonary Edema: Correlation of X-Ray Appearance and Physiologic Changes. W. A. Goodrich.—p. 58.
Mesenteric Lipoma in Child: Roentgenologic Visualization. J. Selman and J. R. Bender.—p. 66.
Roentgen Diagnosis of Glomus Tumors. W. H. Mathis Jr. and M. D. Schulz.—p. 71.
Compression of Spinal Cord Caused by Hodgkin's Disease: Case Reports and Treatment. M. J. Smith and K. W. Stenstrom.—p. 77.
Bilateral Ureterocele: Report of Case with Acute Right-Sided Obstruction. R. Baker and F. P. Brooks.—p. 85.
Beam Localization and Depth Dose Determination. N. G. Demy.—p. 89.
Contribution to Radiology and Pathology of Transmissible Avian Osteopetrosis—Lymphomatosis. J. B. Thiersch.—p. 100.

Fibrocystic Disease of Pancreas.—According to Goin, fibrocystic pancreatic disease is a congenital, familial, highly fatal disease of infants, regularly accompanied by pulmonary changes which are demonstrable in the roentgenogram. It is generally considered to be of rather infrequent occurrence, but it is likely that it is the diagnosis, rather than the disease, which is uncommon. Necropsies on babies indicate that it accounts for perhaps 4 per cent of all infant deaths. The disease has become recognized as a clinical entity only in the past ten years. The disease manifests itself almost entirely as a combination of disease of the respiratory tract and a feeding problem. It may be suspected on the basis of roentgenograms of the chest. These are not, in themselves, diagnostic of pancreatic fibrocystic disease, and it is only in association with a history of repeated pulmonary infection that the condition may be suspected. If the radiologist is aware of the nature of fibrocystic disease, and will elicit a short history, he will frequently be able to furnish the clue which will enable the clinician to establish the diagnosis. Early diagnosis is essential if the child is to have any chance of survival. The pulmonary disease is combated, as is any other pulmonary infection, with sulfonamide drugs and with penicillin, particularly aerosol penicillin. The concomitant vitamin A deficiency requires the administration of large amounts of vitamin A, frequently as much as 150,000 units per week supplemented with vitamins B, C and D. Pancreatic extract is a logical form of substitution therapy. Enteric-coated granules of pancreatic extract are now available, and these may be offered in the baby's food. Milk can be replaced by the casein hydrolyzates, which require no pancreatic ferments for their digestion. "Nutramigen," a casein hydrolyzate in amino acid form with dextrin, maltose and olive oil, is a convenient substitute. The author presents 2 illustrative cases.

Roentgenologic and Physiologic Changes in Pulmonary Edema.—Goodrich points out that pulmonary edema produces shadows on roentgenograms of the chest that simulate other conditions. Certain features help to differentiate edema in most instances. These are (1) the diffuseness of the shadows, (2) relative clearness of the extreme apical and basal lung fields, (3) a tendency for the shadows to vary in size and to show a shift in location on serial roentgenograms, (4) enlargement of the vascular shadows and (5) enlargement of the heart. The underlying physiologic factors in the production of pulmonary edema are (1) increased intracapillary hydrostatic pressure, (2) decreased osmotic pressure of the blood and (3) increased capillary permeability. Pulmonary edema seen in association with heart failure, nephritis and excessive parenteral fluid intake is discussed and illustrative cases are presented. Clinical correlation is essential in determining the responsible disease and abnormal physiology. The shadows seen in the lung fields with edema depend on the interplay of the three physiologic factors. The reasons why edema may occur unilaterally or segmentally are not clear. This may be related to the neurogenic control of capillary size and permeability.

Review of Gastroenterology, New York

15:531-592 (July) 1948

Some Diagnostic Aids in Pancreatic Disease. T. H. McGavack.—p. 537.
Treatment of Intestinal Diseases with Solutions of Water-Soluble Chlorophyll: Preliminary Report. H. A. Rafsky and C. I. Krieger.—p. 549.
Antedating Beaumont and His Physiology of Digestion. F. M. Cunha.—p. 554.
Electric Forces in Digestive Tract. R. Keller and B. Chiego.—p. 561.
Disorders of Colon Function and Their Treatment. J. W. Wiltsie.—p. 574.

15:593-656 (Aug.) 1948

Clinical Evaluation of Gastroscopy. I. R. Schwartz.—p. 601.
Phthalyl Sulfacetimide in Ulcerative Colitis. T. S. Heineken.—p. 611.
Differential Diagnosis Between Essential Parenchymal Hepatic Disease and Primary and Recurrent Cases of Cholecystitis. A. O. Wilensky.—p. 619.
Combined Coronary Disease and Peptic Ulcer. M. Plotz.—p. 628.
Partial Denture Embedded in Sigmoid: Removal and Complications. L. K. Morganstein.—p. 635.

South Dakota Journal of Medicine, Sioux Falls

1:217-258 (June) 1948

Vaginal Douches. G. E. Whitson and F. A. Ellis.—p. 217.
Infectious Neuronitis: Diagnostic Criteria and Case Report. W. E. Donahoe and W. E. Vandmark.—p. 227.
Role of Internist in Management of Cases of Uveitis. H. L. Bair.—p. 230.
Venous Thrombosis. A. Ochsner and M. E. DeBakey.—p. 236.
Cyclodiathermy. G. T. Alliband.—p. 240.

1:259-298 (July) 1948

*Pelvic Cellulitis. C. D. Blake and A. W. Diddle.—p. 259.
Recent Developments in Active Immunization. C. E. Roach.—p. 263.
Adenomas of Colon and Rectum. W. A. Fansler.—p. 268.
Public Health and the Practicing Physician. W. L. Bierring.—p. 275.
Psychosomatic Aspects of Gastro-Intestinal Tract. D. Hastings.—p. 277.

Pelvic Cellulitis.—According to Blake and Diddle it is desirable to differentiate between primary pelvic cellulitis and primary intraperitoneal pelvic infection. The former usually follows trauma to the cervix, uterus or vaginal vault, occurring in criminal abortion, operative delivery or uterine instrumentation. Pelvic cellulitis is frequently due to nonhemolytic streptococci. These micro-organisms are rather resistant and may remain potentially dangerous within an inflammatory mass for long periods of time. On the contrary, the gonococcus, the usual cause of intraperitoneal infection, becomes attenuated in a few weeks or months. The authors discuss observations on 88 obstetric and gynecologic patients with pelvic cellulitis, of whom 81 survived and 7 died. Many of these infections were due to the nonhemolytic streptococcus and, as would be expected, did not respond to treatment with penicillin, streptomycin, sulfadiazine or sulfathiazole alone, or in combination. Since the streptococci may remain potentially active in an old inflammatory mass for long periods, elective pelvic operations should be delayed for six months or, better still, for a year or two.

Southern Surgeon, Atlanta, Ga.

14:413-477 (July) 1948

*Intra-Abdominal Hernia as Cause of Intestinal Obstruction with Special Reference to Duodenal Fossae. J. T. Ellis, S. W. Windham Jr. and S. G. Latiolais.—p. 413.
Acromioclavicular Joint Injuries: Pathology and Operative Treatment. M. Moore Jr.—p. 423.
Malignancies of Duodenum. R. B. McLean.—p. 430.
Meigs' Syndrome: Report of Case of Fibroma of Ovary with Ascites. W. L. Sibley.—p. 456.
Cancer of Stomach. J. K. Quattlebaum.—p. 462.

Intra-Abdominal Hernia as Cause of Intestinal Obstruction.—According to Ellis and his associates there are seven possible places where herniation and strangulation of the bowel can occur within the abdomen. These are in the fossae about the duodenum, including the foramen of Winslow, around the cecum, around the sigmoid, in the supravesical region, through the diaphragm, in exaggerations of normal mucosal folds such as the broad ligaments and congenital defects, and through the omentum. Then there are intestinal protrusions secondary to previous intra-abdominal surgical treatment. Obstruction with no apparent predisposing cause is the type under discussion. The authors present the case of a man, aged 70, in whom preoperative diagnosis of obstruction in the sigmoid, probably on the basis of tumor, was made. At operation the colon was found greatly distended, but no lesion could be found in it. The small bowel was distended in its upper portion, but the ileum near the cecum was flat. The collapsed bowel was followed and was found to pass under a peritoneal fold. The hernia was easily reduced by simple traction. The authors stress that the treatment of these lesions is the same as that of any intestinal obstruction. Especial attention is called to the anatomic arrangement about the orifice of the fossa, for it would be a tragedy blindly to enlarge the neck of the sac and in so doing to sever the inferior mesenteric vein in all cases and, in many, the left colic artery. The reported case was easy in that simple traction reduced the hernia, but, when this is not true, the authors recommend opening the sac over the dilated bowel and deflating the bowel by means of Wangensteen's aseptic technic. This will make it possible to reduce the hernia.

West Virginia Medical Journal, Charleston

44:209-234 (Aug.) 1948

*Some Limitations of Electrocardiography. W. C. Stewart.—p. 209.
Protein—Its Importance in Nutrition of Pregnancy. C. H. Boso.—p. 213.
*Streptomycin in Treatment of Granuloma Inguinale. G. C. Sauer, A. P. Sackett and I. V. Kuhl.—p. 218.
Amebiasis. J. E. Stone.—p. 222.

Limitations of Electrocardiography.—According to Stewart, the normal limits of the electrocardiograph are subject to frequent exceptions. This is particularly true as regards the conduction times of the P-R interval and QRS complex. Abnormalities of the electrocardiogram must always be evaluated with this in mind. The electrocardiograph is of assistance in only a small percentage of cases of congenital heart disease; in patent interventricular septal defect and patent ductus arteriosus the electrocardiogram is most often normal. In rheumatic fever in which myocardial involvement is presumed to be invariably present, the electrocardiogram may show significant changes in only 30 per cent of cases. Determination of the electrical axis of the QRS complex and conclusions as to ventricular hypertrophy may at times be helpful but are subject to many possible errors, and even in the most experienced hands they are of limited value. Coronary sclerosis without associated myocardial degeneration cannot be detected by the electrocardiograph. The electrocardiogram may return to normal after myocardial infarction and tracings made before death may show no abnormality; unless previous tracings have been made and are available the presence of the normal tracing may be misleading. The electrocardiogram is influenced to a considerable extent by the position of the heart. Almost any component of the tracing may be influenced by this factor. The electrocardiogram may be influenced also by various drugs, metabolic disorders and toxic conditions. These conditions or agents may produce changes in the tracing similar in all or many respects to those produced by heart disease.

Streptomycin in Granuloma Inguinale.—Sauer and his co-workers treated 5 Negro patients, 4 men and 1 woman between the ages of 27 and 52, with granuloma inguinale with streptomycin. Tissue spreads from the lesions were examined and Donovan bodies were demonstrated in all the patients. Four grams of streptomycin per day, divided into six doses administered every four hours, were given for five days, or a total of 20 Gm. Lesions on the prepuce, on the glans penis, on the scrotum, on the fourchette and labia were completely healed within six to fifteen days after treatment was completed, with no signs of renewed activity when examined five to seven weeks later. The incidence of treatment failures must still await the test of time, but streptomycin offers new hope to the patient whose disease has become resistant to the antimony drugs.

Yale Journal of Biology and Medicine, New Haven

20:519-594 (July) 1948

Studies in Experimental Frostbite: II. Arteriograms. H. B. Shumacker Jr., Beverly H. White and E. L. Wrenn.—p. 519.
Metabolic Abnormalities in Starvation Diabetes. K. Lundbaek.—p. 533.
Food Intake as Mechanism of Temperature Regulation. J. R. Brobeck.—p. 545.
Enteric Colic. A. S. Brackett.—p. 553.
Electronic Controller of Volleys in Electrical Stimulation. A. Mauro and S. P. W. Black.—p. 567.
Acute Thrombocytopenic Purpura with Platelet Thrombi in Small Blood Vessels: Report of Case. F. H. Epstein, S. H. Deschamps and T. L. Chiffelle.—p. 571.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

32:385-448 (July) 1948

Denig's Operation for Trachomatous Pannus. N. Pines.—p. 385.
Hydatid of Orbit. H. Holland.—p. 395.
Low Power Infra-Red Microscope. T. Stuart-Black Kelly.—p. 396.
Xeroderma Pigmentosum with Affection of Eye. J. Saebø.—p. 398.
Present State of Problem of Retinitis Pigmentosa. I. Biró.—p. 411.
Case of Keratomalacia Cured by Penicillin and Vitamin A. K. Rizk. —p. 416.
Genesis and Operation of Cicatricial (Trachomatous) Entropion of Upper Lid. A. Kettesy.—p. 419.
Contribution to Date on Sight Disturbances Caused by Proliferation of Pigment Epithelium. (An Unusual Complication After Cataract Extraction.) M. Radnót.—p. 423.
Case of Pyocyaneus Ring Abscess of Cornea Treated with Streptomycin. J. Maschler.—p. 426.
Operative Treatment of 5 Cases of Iridodialysis. S. Gördüren.—p. 429.
Six Cases of Scintillatio Albescens. S. Gördüren.—p. 435.
Congenital Cyclopia and Orbital Cyst Together with Other Developmental Anomalies on Same Side of Face. F. Papolczy.—p. 439.

British Journal of Urology, London

20:57-108 (June) 1948

Distribution of Testicular Artery (Internal Spermatic Artery) to Human Testis. R. G. Harrison and A. E. Barclay.—p. 57.
Lesions of Urinary Tract Following Radiotherapy for Carcinoma of Cervix Uteri. T. J. D. Lane.—p. 67.
Primary Carcinoma of Seminal Vesicle: Report of 2 Cases. E. M. Gee.
Stress Incontinence. M. Reddington.—p. 77.
Urinary Irritation in Ceylon. E. E. T. Taylor.—p. 82.
—p. 72.

Irish Journal of Medical Science, Dublin

270:241-288 (June) 1948. Partial Index

*Post-Partum Necrosis of Anterior Pituitary. H. L. Sheehan.—p. 241.
*Post-Partum Necrosis of Pituitary. T. N. A. Jeffcoate.—p. 256.
Diagnosis of Post-Partum Pituitary Necrosis. D. K. O'Donovan.—p. 264.
Obstetric Shock and Pituitary Ischemia. J. F. Cunningham.—p. 268.
Spreading Suppurative Pneumonitis. H. E. Counihan.—p. 270.
Dupuytren's Contracture: Treatment by Massive Doses of Vitamin E. A. R. Parsons.—p. 272.
Staphylococcal Pericarditis: Treatment with Penicillin; Recovery. J. Coffey.—p. 274.

Postpartum Necrosis of Anterior Pituitary.—Sheehan presents 22 cases of postpartum necrosis of the anterior pituitary and says that the significant facts about these cases are in agreement with 19 reported previously. No necroses were found in the pituitaries of patients who died earlier than twelve hours after delivery. It appears that the death of the anterior pituitary tissue usually occurs at about the time of the delivery. Several hours are required before the histologic changes of coagulation necrosis are sufficiently advanced to be identified in sections. The necrosis is always associated with thrombosis of parts of the vascular supply of the gland, and this appears to be the local factor responsible for the ischemia. That the necrosis has its onset at about the time of the delivery suggests that there is some specific obstetric complication. Analysis shows the patient has invariably suffered from a severe circulatory collapse as a result of hemorrhage and/or shock at the delivery. The obstetric causes of pituitary necrosis in women who died from twelve hours to thirty-five days after delivery are listed as retained placenta and postpartum hemorrhage, placenta praevia, accidental hemorrhage, rupture or inversion of uterus, prolonged labor, toxemia or eclamptic shock and abortion. The pituitary necroses are found in women who have survived the first twelve hours after delivery. There are, however, a large number of women who die as a result of shock and/or hemorrhage during the first twelve hours. The most important clinical question is how many women in whom severe pituitary necrosis develop do not die in the puerperium but survive to have clinical cases of long-standing hypopituitarism.

Postpartum Necrosis of Pituitary.—Jeffcoate supports nearly everything that has been said by Sheehan about postpartum necrosis of the anterior pituitary, but considers it unfortunate that authors now describe two syndromes, (1) Simmond's and (2) Sheehan's, differentiating between them according to the causation and whether cachexia is present or not. There seems little basis for this. He thinks that there is only one disease, anterior pituitary failure, the usual cause of which is postpartum or intrapartum necrosis. The ideal treatment would be to secure a regrowth of the anterior pituitary lobe, or at least the hypertrophy or hyperplasia of the remaining fragments. In cases of mild disease, in which ovarian function has not ceased completely and conception is possible, the occurrence of pregnancy may result in sufficient hypertrophy of the remaining healthy pituitary tissue. The alternative is substitution therapy with various pituitary factors, but this is generally unsatisfactory, and so replacement therapy can be given at a lower level by means of thyroid, desoxycorticosterone, adrenal cortical extracts, estrogens, progesterone and testosterone as an alternative to the androgens of the adrenal cortex. The author gives a brief account of an experiment carried out on a woman of 41 who showed all the typical features of Simmond's disease which she had for four years and which followed postpartum hemorrhage in her third confinement. The possibility of tissue transplants in such patients had been discussed and transplanting of tissue which had undergone neoplastic change and which presumably no longer required its natural stimulus had been considered. The author and associates looked particularly for an adrenal cortical tumor; ultimately one presented in a girl 4½ years old who showed typical features of the adrenogenital syndrome. The blood groups of both patients were the same. The adrenal tumor, which ultimately proved to be a cortical adenoma, was removed. Half of the tumor was used for two transplants (approximately 13 Gm. each), one into each of the rectus abdominis muscles. The effect of the transplant was only temporary; eight months after the transplant the 17-ketosteroid excretion had fallen to nil. It was proved, however, that the patient suffers most as a result of the loss of adrenal cortical function. Until it is possible to provide full anterior adrenal pituitary substitution therapy, there is a good reason to believe that most patients would derive most benefit from an attempt to replace some or all of the adrenal cortical factors.

Lancet, London

2:1-40 (July 3) 1948

A Surgeon's Life. H. Ogilvie.—p. 1.
Pain Chart. K. D. Keele.—p. 6.
Leptospirosis Canicolaris. J. E. Minkenhof.—p. 8.
Malarial Diabetes: Report of Case. L. Rau.—p. 11.
Strangulated Traumatic Diaphragmatic Hernia. J. Borrie and H. M. Foreman.—p. 12.
*Pilonidal Sinus in Barber's Hand with Observations on Postanal Pilonidal Sinus. D. H. Patey and R. W. Scarff.—p. 13.

Pilonidal Sinus in a Barber's Hand.—Patey and Scarff believe that pilonidal sinus is essentially an acquired infective and foreign body granulomatous reaction to buried hair. Among the reasons which had led to this view was the development of a pilonidal sinus in a barber's hand as a reaction to hair embedded there. The man, aged 34, had often picked out hairs which had stuck in the skin of his hands. Then years ago an abscess had developed from this cause in the web between the middle and ring fingers of the left hand. The abscess had been incised and had healed. About the middle of 1947 a sinus developed in the web between the middle and ring fingers of the right hand, into which hairs tended to enter and whence they often had to be picked out. In September 1947, the condition flared up into acute cellulitis of the web with associated lymphangitis and lymphadenitis. Under treatment with penicillin the acute inflammatory reaction subsided. In November 1947, he was readmitted to hospital, and the sinus and nodule were excised. The nodule into which the sinus led was a small cyst containing about half a dozen hairs. The cyst had ruptured to form a small abscess. The authors present a second, similar case which was communicated to them by other observers. They say that these are the third and fourth recorded cases of a typical pilonidal sinus in a barber's hand.

Medical Journal of Australia, Sydney.

1:753-780 (June 19) 1948

Goiter Studies: III. Iodine Prophylaxis of Endemic Goiter. Anita Osmond and F. W. Clements.—p. 753.
Difficult Autopsy. E. H. Derrick.—p. 757.
Use of Tracheotomy in Pharyngeal and Respiratory Paralysis Following Diphtheria and Bulbar Poliomyelitis. H. McLorinan.—p. 765.
Observation on Lichen Urticatus and Light. J. M. O'Donnell.—p. 766.
Penicillin Resistance of Staphylococci. Dorothy H. Card.—p. 767.

Acta Oto-Laryngologica, Stockholm

36:93-198 (March-April) 1948. **Partial Index**

Involvement of Rhinopharyngeal Lymph Nodes in Inflammatory Diseases of the Pyramidal Apex. R. Podestá.—p. 93.
Ossification and Conformation of Thyroid Cartilage in Men. P. Roncallo.—p. 110.
Cancer of Epiglottis. G. Révész.—p. 135.
Behcet's Syndrome: Report of Case. K. Faaborg-Andersen.—p. 146.
Otogenic Encephalitis. H. K. Kristensen.—p. 151.
Cerebrospinal Meningitis and the Acoustic Function. S. Johnsen.—p. 169.
*Postbronchoscopic Reactions. C. M. Smidt.—p. 178.

Postbronchoscopic Reactions.—Smidt presents observations made in the course of five hundred bronchoscopic interventions. None of these interventions were made for the removal of a foreign body. A total of one hundred and nine bronchoscopies were made on 45 tuberculous patients. As a rule, bronchoscopy is a harmless procedure, but in 18 instances fever followed the intervention in tuberculous patients. In another case a secondary rise in temperature occurred a week later and lasted ten days. Two of the patients with the initial rise in temperature died after twelve days and three weeks, respectively. These cases involved women with extensive tuberculous lesions of the lungs. A male patient exhibited propagation of bronchial tuberculosis to the larynx without elevation of temperature or any pulmonary dissemination of the process. In the course of the three hundred and ninety-one interventions on 270 nontuberculous patients, temperature rise occurred in about 12 per cent of the cases. Thus the initial rise in temperature after bronchoscopy is not characteristic of tuberculosis. Although tuberculosis is not always a contraindication to bronchoscopy, it is contraindicated in patients whose general condition is extremely poor, for in these it may produce dissemination of the process.

Archiv für Dermatologie und Syphilis, Heidelberg

187:133-320 (June 7) 1948. **Partial Index**

Histologic Aspects of Epidermophytosis. A. M. Memmesheimer.—p. 135.
New Cutaneous Thermometer. N. Klüken.—p. 165.
Nonspecific Epididymitides. W. Hilgenberg.—p. 169.
Differentiating Forms of Chronic Pemphigus into Those Capable of Remission and the Malignant Type on Basis of Blood Picture. H. Höcker.—p. 191.
*Importance of Leukopenic Index in Detection of Food Allergies. A. M. Memmesheimer.—p. 200.
Allergenic Action of Sulfonamides. F. Koch.—p. 213.
"Humoral Blood Picture" in Course of Syphilis. A. Linke and A. Drassdo.—p. 289.

Leukopenic Index and Food Allergies.—Memmesheimer used the leukopenic index of Vaughan for the detection of food allergies in 250 patients of whom 166 had eczema or an eczematoid, 56 urticaria, 16 asthma and 12 various cutaneous lesions. The index is the ratio between the fasting value of the leukocytes and that value which is obtained during the digestion of the food presumably responsible for allergic manifestations. The index is positive when intake of the food is followed by a decrease in leukocytes and is negative when an increase follows. The author found that Vaughan's index is valuable in the detection of food allergies. Since no special apparatus is required, it can be carried out even in small clinical laboratories. Exclusion from the diet of the foods that have been detected as allergens by means of the leukopenic index produced impressive therapeutic results. Removal of foci of infection is likewise helpful and is frequently followed by considerable improvement.

Athena, Rome

13:1-22 (Jan.-Feb.) 1948. **Partial Index**

*War Nephritis: Etiopathogenesis. C. Coruzzi and G. Lodi.—p. 19.

War Nephritis.—Coruzzi and Lodi observed 70 soldiers with war nephritis who entered military hospital in the course of the first semester of 1941. Ten patients in the group had edema which was controlled by bed rest and administration of a diet rich in vitamins C and B. The authors believe that war nephritis is due to diminished resistance of the body because of certain avitaminosis. Intense humidity is a causal factor of importance secondary to avitaminosis. The treatment consists of bed rest and administration of a diet rich in vitamins C and B.

Lyon Chirurgical, Paris

43:385-512 (July-Aug.) 1948. **Partial Index**

Operative Cholangiography: Fifteen Years of Experience. P. L. Mirizzi.—p. 385.
*Considerations on Physio-Pathology of Clawhand in Volkmann's Disease: Experimental Study of Contracture Caused by Intra-Arterial Injection of an Iodoorganic Product. F. Fontaine, C. Kayser, C. Marx and A. Dany.—p. 419.
*General Pathology of Diskopathies. A. Ricard and P. F. Girard.—p. 419.

Volkmann's Contracture.—Fontaine and his co-workers produced in dogs a contracture or flexure of the paw of the forefoot by injecting several cubic centimeters of "tenebryl" (sodium diiodomethane sulfonate, an analogue of methiodal sodium) into the humeral artery. These contractures occurred regularly three to eleven seconds after the injection and were associated with sharp pain and disappearance of the peripheral pulse. The contractures were recorded by electromyography; they reached their maximum immediately and subsided gradually within fifteen to thirty minutes. Direct compression of the humeral artery by tourniquet did not produce contractures, but they became manifest as soon as the tourniquet was removed and the injected iodine substance was allowed to reach the periphery. The trunks of the nerves of the paw were sectioned, but spasms of the paw were still produced by intra-arterial injection of "tenebryl." The contracture was of short duration and a second injection of "tenebryl" proved ineffective. Ischemia by direct compression of the humeral artery does not produce muscular spasm. The contractures obtained by intra-arterial injection of "tenebryl" appear only after the irritative substance has reached the peripheral vessels. A central nervous mechanism may be considered because of the fact that section of the peripheral nerves greatly reduced the intensity of the spasm and prevented its recurrence. These results may offer an explanation for the origin of Volkmann's ischemic contractures in men. They support the observation of Lombard, who reports that in a child with Volkmann's disease, associated with paralysis of the three nerves, contracture of the fingers subsided after infiltration of flexors and pronators with procaine hydrochloride while paralysis persisted. Another experiment showed that stretching of the leg of the dog during the decreasing phase of the contracture caused reappearance of the contracture. This may explain the occasional failure of treatment of Volkmann's ischemia by early straightening of flexed fingers.

Diskopathies.—According to Ricard and Girard, "discal disease" is characterized essentially by degeneration of the intervertebral cartilage. It may be caused by trauma, by inflammatory lesions or by a local abiotrophic process. A hernia of the nucleus pulposus may result occasionally, but discal chondromalacia occurs in the majority of the cases. It may be followed immediately by the crushing of the disk, sometimes associated with protrusion of the cartilage, which may vary according to circumstances. Dislocation of the vertebral column may be another sequela which may be caused by retropulsion in the cervical region or by rotation of a vertebra around its axis in the lumbar region. The term "hernia of the nucleus pulposus" does not seem to give an exact description of the lesion, in which protrusion of the disk frequently cannot be demonstrated on surgical intervention. One must consider another pathogenesis in which the vertebral dislocation has a relative part. This concept is suggestive of surgical fixation of the movable vertebra in order to obtain excellent permanent results.

Rev. de la Asociación Médica, Argentina, Buenos Aires

62:227-270 (May 15-30) 1948. **Partial Index**

*Thoracoplasty in Pulmonary Tuberculosis in Adolescents: Technic, Indications and Late Results. A. Sangiovanni and L. L. Boffi.—p. 245.

Thoracoplasty in Pulmonary Tuberculosis in Adolescents.—Sangiovanni and Boffi report good immediate and late results of thoracoplasty in 5 adolescents with bilateral pulmonary tuberculosis. The technic and indications are the same as in adults; namely, operation in two or three stages with adequate intervals between the stages. The indications are: presence of fibrocaseous tuberculosis, open, stabilized or chronic, in which pneumothorax cannot be carried out or in which pneumothorax was ineffective. In bilateral tuberculosis it is advisable to delay the operation, which can be performed when the contralateral lesion is in a period of minimal activity.

Book Notices

Survey of Food and Nutrition Research in the United States, 1947: A Compilation of Research Pertaining to Foods and Nutrition in Academic, Governmental, and Industrial Laboratories. By the Committee on Survey of Food and Nutrition Research of the Food and Nutrition Board with the Support of the Committee on Food Research of the Quartermaster Food and Container Institute for the Armed Forces, R&D Branch, O.Q.M.G. Paper. Price, $1. Pp. 306. Food and Nutrition Board, National Research Council, 2101 Constitution Ave., N.W., Washington 25, D.C., 1948.

This book makes available the names of institutions and research workers who are interested in problems of foods and nutrition. It supplies also a list of titles of research projects now being carried on or contemplated. Of necessity, such a work as this has a certain number of drawbacks such as the lack of critical selectivity in listing laboratories with reference to the adequacy of physical facilities and trained personnel. Nevertheless, the work constitutes a valuable attempt to collect and correlate material into reference form so that one can see the type of research being carried on in the field of food and nutrition. The method of indexing is rather complex but is clearly explained, so that little difficulty should be encountered in finding the material being sought.

The book is organized into general sections under physiology, chemistry, technology, economics, bacteriology, psychology, participating organizations and personnel involved in this type of research. The listing indicates 4,086 projects, 5,000 investigators and 606 contributing organizations. The subject index is 96 pages long.

This valuable book fills the need for a comprehensive listing of research projects being conducted in the field of foods and nutrition in the United States. It is recommended to research workers and to executives who are seeking skilled personnel and laboratories where food and nutrition studies can be conducted.

Rural Health and Medical Care. By Frederick D. Mott, M.D., and Milton I. Roemer, M.D., M.P.H. Cloth. Price, $6.50. Pp. 608, with 38 illustrations. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 18, 1948.

The disappearance of physicians from many villages, coincident with the passing of the horse and buggy era, served to direct attention to the rapidly changing relation between a dynamic medical science and the society which it sought to serve.

The thinking of those who formulated solutions to apparent maladjustments in earning capacity and social opportunity available to our people reached divergent conclusions usually by following dissimilar paths of reasoning. The research technic is usually considered a search for truth, which is established by the searching analysis of research material. The same technic can be utilized to bolster an opinion previously held.

Following the first World War, the sudden collapse in realty values brought hardship and financial ruin to many. The continuing inequity between the price received and the price he had to pay made the farmer acutely aware of his need for economic parity with labor and capital. It was quite to be expected that the idea of parity should become the yardstick of other civilian values.

The authors have done a commendable job in compiling data from all available sources about rural living and the incidence of morbidity and mortality. Comparisons with like statistics involving urban populations are made to show that the rural health level might be improved if urban advantages could be applied.

This compilation of facts and figures covering health levels, health needs, health personnel and facilities, services and expenditures, together with a recital of governmental efforts to improve rural health, will be a welcome source of material otherwise difficult to find.

In the discussion of voluntary health plans the authors concede that the plans have produced striking improvement in certain directions while they deplore the limited quantity of aid provided when compared with the comprehensive service envisaged by proponents of compulsory tax-supported medical care. The frank acknowledgement by the authors of the need for compulsion in tax-supported plans should earn for them much credit for sincerity; and honesty of expression. Their optimism in the ultimate triumph of their plan is revealed by the last sentence of this chapter: "One can hardly miss the analogy of the experience of some thirty-five other nations in which the growth of voluntary plans was invariably the preliminary step to the organization of national systems of 'compulsory' or universal health insurance."

The last chapter of the book, entitled "The Goal in Sight," recites in moving detail the evidence in every state in the Union of increasing interest in health matters as evidenced by formation of health councils, state conferences and like activities. The authors assert their firm conviction that the only successful method is through compulsory tax-supported medical service established by federal legislation.

Those who live in or near the country know that there is no ground swell demand emanating from large segments of the population. Such agitation as witnessed to date has been created by those leaders who understand and value the benefits which medicine can bestow and altruistically want those benefits available to every one.

It is evident that some plan of health education must precede any great triumph in the field of rural health. Given this advantage, the initiative and resourcefulness of our rural people can be depended on to find the solution in the best American tradition of community and individual accomplishment.

Diabetes Mellitus and Exercise: A Physiopathologic Study of Muscular Work in Patients with Diabetes Mellitus. By E. O. Errebo-Knudsen. Reprinted from "Reports of the Steno Memorial Hospital and the Nordisk Insulinlaboratorium," Volume III, 1948. Denne Afhandling er af det lægevidenskabelige Fakultet antaget til offentlig at forsvares for den medicinske Doktorgrad, København. Pp. 152, with 39 illustrations. G. E. C. Gads Forlag, Vimmelskaftet 32, Copenhagen K, 1948.

This small volume translated from Danish deals with the pathologic physiology of an important subject—the effect of muscular exercise on the person with diabetes. That the work was done under the eyes of Dr. H. C. Hagedorn—discoverer of protamine zinc insulin—at the Steno Memorial Hospital in Copenhagen, Denmark, is reassuring as to its scientific worth.

First there is a historical view of the subject. After that is a description of the experimental procedures, then the results of the experiments and last a discussion of the findings in the light of their clinical aspects. Attention is called to the fact that previous observations by various workers were based on blood sugars taken at the end of exercise periods—which would not have given the same readings as those taken during the exercise. It is also pointed out that records were not made of the total work done in comparison with levels of blood sugar.

These studies revealed that in nondiabetic persons the physical condition of the subject determined the type of blood sugar curve more than the intensity of muscular effort. The magnitude of the carbohydrate depots and the ease with which carbohydrate was mobilized were equally important in the pattern of the blood sugar curves. After ingestion of carbohydrate, if exercise is taken, the blood sugar curve runs at a lower level than when no exercise is taken. When exercise is begun an hour after a carbohydrate meal, blood sugar falls, even to hypoglycemic levels. These same methods applied to diabetic patients tended to give curves similar to those of nondiabetic persons, but the patterns of the curves were comparatively inconstant. Severe exertion of sufficient duration induced hypoglycemia, but this hypoglycemia was less severe where the subject had been subsisting on a high carbohydrate diet. Diabetic persons who had been well regulated were less easily thrown into hypoglycemia than those which were not stabilized.

So far as ketone production is concerned, exercise is followed first by a reduction in ketones. This reduction is then followed by an increased output, and another period of increased output occurs during the period of restitution. Reviewing previous observations on the occurrence of ketones after exercise, Knudsen notes that the generally accepted opinions have been that light exercise does not cause increased ketonuria, but that severe exertion does. This corroborates the early observation of Barach made in 1909 on a series of 55 young men taking part in the Marathon Race (24.85 miles). Barach found that the ketone output (betahydroxybutyric acid—diacetic and acetone) varied directly with the strenuousness of the effort; with the distance covered in the shortest time.

So far as respiratory quotient is concerned, these studies revealed that in normal persons after exercise the respiratory quotient is increased. In diabetic persons the tendency is similar but not constantly so.

Reviewing the entire series of experiments, one readily sees that there are still too many unknown factors and that these will not be revealed by the blood and urine sugar curves, by the ketone output or the respiratory quotient.

Hepatic function, glycogen storage, mobilization of sugar, hormone influences—all these are involved to such an extent that the simpler diagnostic criteria fail to reveal the underlying pathologic physiology. As the author himself suggests, these experiments are the first steps toward more research in pursuit of a complete understanding.

Introduction to Physiology. By W. H. Newton, D.Sc., M.D., Holt Professor of Physiology, The University, Liverpool. Cloth. Price, $2.50. Pp. 284, with 113 illustrations. Williams and Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

This small volume, in the admirable tradition of English science, attempts to present human physiology with sufficient rigor and detail, yet with sufficient vigor and sweep, so that it will appeal both to the professional student and to the general reader. On the whole it succeeds well.

The first third treats activity of the whole organism, beginning with heat production, body temperature and problems of comfort and climate, and moving on to control by the nervous system and the nature of movement. Then comes a brief survey of the structure and function of the great organ systems of the body, followed by chapters dealing with circulation, respiration, exercise, food, digestion, metabolism, excretion, endocrines, reproduction and sense organs in greater detail.

The text is well written, lucid and provocative, with a minimum of technical terms or of factual recitation. Chemical matters are mostly elided. The figures, over one hundred, are informal and occasionally unattractive, but mostly clear and informative. There is no bibliography. The volume could profitably be put in the hands of the interested layman or beginning student.

The Mechanism of Abdominal Pain. By V. J. Kinsella, M.B., Ch.M., F.R.C.S. Cloth. Price, 32s. 6d. Pp. 230, with 17 illustrations. Angus & Robertson, Ltd., 89 Castlereagh St., Sydney, N.S.W., Australia, 1948.

This book, divided into twenty-two chapters, deals with the subject of abdominal pain. Interspersed in the first chapter, pertaining to historical data, are some interesting anatomic plates starting with the time of Vesalius. Basing his opinion on clinical evidence—namely, patients with transverse lesions of the spinal cord—Kinsella is of the opinion that some pain fibers from the abdominal viscera probably ascend in the sympathetic trunk, but not in the vagus. The author emphasizes the limitations of animal experimentation and prefers to make his observations in man during operations with the patient under local anesthesia.

He stresses the belief that if a viscus is cut or clamped no pain results because few nerve fibers are present; however, if the vascular part of the mesentery is cut or clamped pain results because of the great number of fibers which are present and stimulated. The subject of muscular rigidity is discussed; however, this is not differentiated from muscular defense. He divides parietal adhesions into two types, the painless and the painful, the latter being attached to the parietal peritoneum. Chronic appendicitis is mentioned as a definite entity to which many would take exception. He does not identify what his concept of chronic appendicitis is, and since many deny the existence of such a condition one is left wondering what part this "lesion" played when associated with other pathologic changes.

Chapter 22 contains an excellent general summary which amplifies the material previously presented. Although the book deals with material which is moot and open to discussion, it has been approached scientifically and presented well. The book is well written and can be recommended to those interested in the subject of abdominal pain.

Medical Symphony: A Study of the Contributions of the Negro to Medical Progress in New York. By Gerald A. Spencer, M.D. Cloth. Price, $3.50. Pp. 120, with illustrations. The Author, 129 W. 129th St., New York 27, 1947.

The title of this small book is taken from a far fetched metaphor which likens the various groups of physicians to the groups of instruments in a symphony orchestra, each of which has its individual score and contributes to the harmony of the whole. The implication is that Negro physicians have a definite role in the medical profession and require equal opportunity for expression, for development and to contribute. While the subtitle indicates it to be a study of the contributions of Negro physicians to medical progress in New York, there is in fact no reference to any achievement that has actually advanced medicine. A good deal of space is given to an account of the struggle which Negroes have made for positions on hospital staffs, particularly on Harlem Hospital staff. Memberships in medical societies, generally considered as necessities, are regarded as accomplishments. Reference is made to dentists who have lucrative practices, druggists who are successful, and nurses who hold good positions. The conviction is obtained that, with one or two exceptions, the excellent opportunities for study and research which New York affords have been disregarded by Negro physicians. In addition to being mistitled the book is poorly written and edited.

Recent Advances in Pathology. By Geoffrey Hadfield, M.D., F.R.C.P., Professor of Pathology in the University of London, London, and Lawrence P. Garrod, M.A., M.D., B.Ch., Professor of Bacteriology in the University of London. Fifth edition. Fabrikoid. Price, $6. Pp. 363, with 60 illustrations. The Blakiston Co., 1012 Walnut St., Philadelphia 5, 1947.

The fifth edition, as previously, endeavors to set forth some, although not all, of the progress in pathology. The chapter on liver has been thoroughly revised and includes the recent concepts of hepatic disease in relation to diet, cirrhosis and the underlying changes in infectious hepatitis.

The chapter on inflammation includes some of Mencken's concepts of leukotaxine, necrosin and the role of hyaluronic acid and hyaluronidase in bacterial diseases.

In a brief chapter, the hypersensitive state in infections is discussed. An excellent chapter, with illustrations, describes reticulosis. Of particular interest are the chapters on experimental cancer research. In the cardiovascular system, rheumatic fever, hypertension and atheromatosis are reviewed from the experimental point of view.

Renal diseases are described according to a modification by Ellis of the original Volhard and Fahr classification. Crush syndrome and extrarenal uremia are included. A short chapter on the ductless glands has been added.

The contents are both interesting and clear in their descriptions and give the newer concepts of many important pathologic subjects.

American Pharmacy. Vol. II: Advanced Pharmacy: Medical, Surgical and Dental Supplies; Animal Health Pharmacy. Editor-in-Chief: Rufus A. Lyman, M.D., Director, School of Pharmacy, University of Arizona, Tucson. Technical Editor: George Urdang, Ph.G., D.Sc.Nat., Director, American Institute of History of Pharmacy, Madison, Wis. Advisory Editors: James M. Dille, Ph.D., Professor of Pharmacology, University of Washington, Seattle, and others. Cloth. Price, $7. Pp. 379, with 111 illustrations. J. B. Lippincott Co., 227-231 S. 6th St., Philadelphia 5, 1947.

This book, volume II of the American Pharmacy series—will have a special appeal for the busy physician who would like to have a working knowledge of the vast number of medical, surgical, dietary and health supplies carried by a well equipped pharmacy.

No pains were spared by the editor, one of the nation's foremost pharmacy educators holding an M.D. degree, to make this book highly informative and useful. It is conveniently divided into two well organized parts. The first deals with such subjects as flavoring and coloring agents, odors and deodorants, solvents, stabilizing agents, injections, colloids, suspensions, emulsions and tablet manufacturing. Of special interest is a basic study on the extraction of animal tissues.

Because of the completeness of the topics covered, the book should make a valuable addition to the physician's library. That goes the same for the pharmacist who prides himself on a knowledge of the pharmaceutic needs of the medical profession.

Food and Nutrition: The Physiological Bases of Human Nutrition. By E. W. H. Cruickshank, M.D., D.Sc., Ph.D., Regius Professor of Physiology in the University of Aberdeen, Aberdeen, Scotland. Cloth. Price, $4.50. Pp. 326, with 41 illustrations. *William Wood & Co.*, Mt. Royal & Guilford Aves., Baltimore 2, Maryland, 1946.

This book presents a survey of the present knowledge of the physiology of food and nutrition. Dr. Cruickshank, a well known authority in the field of nutrition, gives a résumé of the history of human dietaries and goes on to discuss the nutrition of various people, dwelling at some length on the nutritional status in England and the effects of wartime rationing on the health of the populace. The physiologic bases of nutrition and dietary planning are clearly presented, along with the social and economic aspects of foods. Although the scope of the book may appear to be broad, it will be found that the author discusses only those subjects which he regards as being of current interest. While the book is intended primarily for the medical student and the practitioner, the directness and clear style of the author make it valuable to any one interested in the contribution of food to the health of the individual and the nation.

Clinical Ophthalmology for General Practitioners and Students. By H. M. Traquair, M.D., F.R.C.S., Consulting Ophthalmic Surgeon, Royal Infirmary, Edinburgh. Cloth. Price, $9. Pp. 264, with 72 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1918.

As the preface states—"This book might be called 'Ophthalmology Without an Ophthalmoscope.'" It is written in simple language and does not go into a great deal of detail. Also, many subjects are omitted entirely. It is essentially a reference book for the general practitioner, who often is at a loss to understand the letters from ophthalmologists and discussions he may have with ophthalmologists about patients whom he also is treating.

A rather interesting, though short chapter is devoted to "Misconceptions and Prejudices," and there is a short appendix in which advice is given to the general practitioner who may be called into court to give an opinion on some ocular condition. This chapter also contains a number of prescriptions which might be helpful to him when he cannot send his patient immediately to a specialist.

Malaria with *Special Reference to the African Forms.* By W. K. Blackie, M.D., Ph.D., F.R.C.P. Boards. Price 10s. 6d. Pp. 104, with 1 plate. Published for the Post-Graduate Press by The African Bookman, P.O. Box 3115, *Cape Town, 1947.*

The first three chapters comprise a concise and well presented historical review, the parasitology of the species of the plasmodia pathogenic for man and the structural and humoral pathology of the disease. The remainder of the monograph is devoted to an excellent description of the varied clinical features of the disease, diagnosis and treatment. The differing phenomena in the nonimmune European and the African who has acquired premunition from repeated infection are emphasized. However, the author places a somewhat undue importance on certain serologic procedures for the diagnosis of infection. The chapter on treatment is a useful exposition of therapeutic methods for the management of the particular clinical types and a discussion of the respective usefulness of quinine, quinacrine, pamaquine naphthoate and chlorguanide hydrochloride. This monograph can be recommended unqualifiedly to the practitioner of medicine in the tropics.

Experiment Design and Judgment of Evidence. By Errett C. Albritton, M.D., Professor of Physiology, *George* Washington University School of Medicine, Washington, D. C. Paper. Price, $2.85. Pp. 114, with 26 illustrations. The Author, 1335 H St., N.W., Washington, D. C., 1948.

The stress in this book is implied by the title; it is a book on experiment design and not a statistics book. The first 59 pages are devoted to the description of the problems which arise in the planning of medical experiments and in the type of observations to be made. Approximately 20 pages are devoted to the technic of calculation, the central point being the development of a "result-statistic," which is a constant to be referred to a table presenting probabilities for explaining observed results on the basis of chance. The remainder of the book is devoted to an analysis of the problems which have arisen in medical research, the majority having been taken from The Journal of the American Medical Association. A minimum of mathematics is required of the reader. Only the simplest statistical tools are explained, the more complicated subjects, such as correlation, are left to other textbooks. Illustrative problems cover percentages, means, chi-square and simplest forms of variance analysis. Dr. Albritton has succeeded to an amazing extent in presenting these somewhat abstract statistical concepts in a form which is usable by physicians in medical research. The favorable reception given the earlier brief edition will undoubtedly be far exceeded by the reception given the new edition.

Hernia: Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis, and Treatment. By Leigh F. Watson, M.D., F.I.C.S. Third edition. Cloth. Price, $13.50. Pp. 732, with 323 illustrations by Helen Lorraine, Willard C. Shepard and Ralph Sweet. C. V. Mosby Co., 3207 *Washington Blvd.*, St. *Louis* 3, *1948.*

Watson's book has been standard on the subject of hernia for over twenty-five years. This new edition, the third, still maintains the general excellence of presentation that prevailed in the earlier ones.

There is much new material in the text, including accounts of the Harrington technic for repair of hiatus hernia; Babcock's procedure using fine wire sutures; current trends regarding early ambulation, thrombosis and embolism and suture materials. The sections devoted to the surgical and to the sclerosing therapy technic are particularly directed to the reader's attention as being especially praiseworthy. Much information appertaining to the medicolegal aspects of hernia is also present.

The well known medical artists Lorraine, Sweet and Shepard deserve credit for their accurate, crisp drawings.

Every practicing surgeon should avail himself of a copy of this comprehensive treatise on the subject of hernia.

Traitement chirurgical de la tuberculose pulmonaire. Par Henry Joly. Paper. Price, 820 francs. Pp. 282, with 211 illustrations. Vigot Frères, 23 *rue de l'École-de-Médecine (VI^e^ Arr^t^), Paris, 1947.*

This work by a French surgeon is of extreme interest as showing the continued progress made in thoracic surgery in France as well as in other countries during the recent war. There is a good introduction with historical review of thoracic surgery. The principles of collapse therapy and the anatomic considerations are thoroughly discussed. There is a chapter devoted to the functional study of the lungs before operation which is excellent. Thoracoplasty, extra-pleural pneumothorax, cavitary drainage and phrenic nerve paralysis are all discussed. The indications are especially well studied. There is a separate section on combinations of collapse therapy measures and another on the treatment of empyemas complicating pneumothorax.

The book is well illustrated with sketches and diagrams, the reproduction of roentgenograms is excellent and there are numerous illustrations of the use of tomography. This book is highly recommended for use by thoracic surgeons and phthisiologists.

Progress in Clinical Medicine. By Various Authors. Edited by Raymond Daley, M.A., M.D., M.R.C.P., and Henry G. Miller, M.D., M.R.C.P., D.P.M. Cloth. Price, $6. Pp. 356, with 39 illustrations. Grune & Stratton, 381 Fourth Ave., New York 16, 1948.

The book presents an excellent review of important recent advances in the field of clinical medicine. This is not a textbook, but should serve well as a brief refresher course. The bibliography and laboratory data are excellent. One might be unfamiliar with some of the British terminology. The rapidity of scientific advance makes a small part of the material presented obsolete as soon as it is written, but this should not detract from the value of the book as a whole.

Eating for Health. By Pearl Lewis, B.S. Cloth. Price, $2.25. Pp. 121, with 3 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1948.

Pearl Lewis presents an elementary discussion of reasons why the body requires food; which foods contain nutrients essential for health, and representative diets for normal persons of different age groups. The book is written for the layman. The untrained housewife will find it particularly helpful in planning and preparing well balanced meals. Miss Lewis was formerly in charge of the dietary department of the Kahler Hospital and Hotel.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

INFLUENZA VACCINE

To the Editor:—What is the status of immunization with influenza virus vaccine? Is there any point in giving mixed influenza virus vaccine, and, if so, what products are now available and when should they be given?

Shepard G. Aronson, M.D., New York.

Answer.—Influenza virus vaccine has been shown to have definite effect in the protection against influenza, type A and type B. However, in 1947 the strain which appeared was somewhat different antigenically, and the vaccine employed at that time had little influence. Since then a representative strain of that group (A′) has been incorporated in the vaccine and one can anticipate that it should also be beneficial. In view of previous results the vaccine might well be of some aid in the prevention of influenza. Influenza virus vaccines are prepared by a number of commercial firms and are all licensed by the National Institute of Health by the same standards. Probably it would be more effective to administer the vaccine in October or thereabouts, in order to obtain any effect before an epidemic should appear.

ROCK WOOL

To the Editor:—For the past six months a patient has had chronic bronchitis. He states that it started after lathing a building in which "rock wool" was used as insulation material. Several times this material fell in his face and he had a "coughing spell." Roentgenograms of his chest show numerous spots, which might be foreign material in his lungs. Sputum is negative for acid-fast bacilli. Could such insulation material produce acute laryngitis followed by bronchitis? What treatment is indicated? As this case may become a legal matter I need help in making the correct decision.

J. Guild Wood, M.D., Weatherford, Okla.

Answer.—Insulating rock wool is a manufactured complex glassy silicate. Its content of free silica is insignificant, and other constituents are incapable of producing any harmful pneumonoconiosis akin to silicosis. After prolonged and extensive exposure to rock wool dust, the most that might arise would be "benign pneumonoconiosis." The extent of exposure implied in the query is casual and negligible. Gross exposure to any particulate substance on an accidental basis might induce minor and temporary inflammation along the respiratory tract on a mechanical basis. Fairhall and his associates (*J. Indust. Hyg.* **17**:263 [Nov.] 1935), from their investigation of properties of rock wool conclude:

> The chemical data thus obtained entirely deny the existence of any hygienic hazard in connection with contact with commercial rock wool of the type investigated. The histological examination of the lungs, liver and kidneys revealed no constant or significant pathological changes. In the dusted cats there was evidence of inhalation of considerable quantities of silicate and the accompanying changes in the lungs were those which one might expect such foreign matter to produce.

So far as rock wool is involved in the present instance, no treatment is indicated and the prognosis is unequivocally good.

RETINITIS PIGMENTOSA

To the Editor:—Is retinitis pigmentosa hereditary, and should one with this disease be advised not to have children? What advances have been made in treatment of this disease?

M.D., New Jersey.

Answer.—Retinitis pigmentosa is chronic slowly progressive degeneration of the retinal neuroepithelium, rods and cones, with migration of pigment granules into the empty retinal spaces and connective tissue hyperplasia. Symptomatically it is characterized by night blindness, progressive disturbances of the visual field, usually in the form of a ring scotoma and optic atrophy, and typical widespread visible pigment deposits in the substance of the retina. The disease slowly progresses to blindness, with frequent remissions and recovery of function. The cause of the condition is not known. Levy-Wolff (Pathogenesis of Retinitis Pigmentosa, *Am. J. Ophth.* **23**:275-285 [March] 1940; 418-322 [April] 1940) considers the condition primarliy a vascular disease due to a hypothalmic disturbance. Brown and Whitney (Peripheral Vascular Picture in Retinitis Pigmentosa, *Arch. Ophth.* **24**:984, 1940) found a generalized disturbance of the capillary system, to which they attributed the disease. It may be inherited as a dominant characteristic, affecting either sex, as a sex-linked recessive transmitted by females and affecting only males or as a recessive trait. No reliable eugenic advice as to the possibility of transmission to the next generations can be given until the nature of the pedigree has been worked out. An impressive number of pedigrees have been determined (Duke-Elder, W. S.: Text-Book of Ophthalmology, St. Louis, C. V. Mosby Company, 1941, vol. 3, pp. 2,765-2,792), and the condition is considered as being universally inherited even when other cases in the immediate family cannot be identified.

There is no specific treatment. Methods involving vasodilation by drugs or section of the ocular sympathetic nerves have been favored because of the obvious vasoconstriction of the retinal arterioles, but there is no evidence of permanent improvement. Gordon (Treatment of Retinitis Pigmentosa, with Special Reference to Filatov Method, *Am. J. Ophth.* **30**:565 [May] 1947; The Experimental Treatment of Retinitis Pigmentosa, *Tr. Amer. Acad. Ophth. & Otolaryng.*, p. 191 [Jan.-Feb.] 1948) treated a number of patients with the widely publicized Filatov method, without beneficial results. The remissions which occur normally in the course of the disease have led to many enthusiastic reports, but as yet nothing is known that will cause permanent improvement.

HIRSUTISM

To the Editor:—What is the best advice that I can give a mother who is worried about hirsutism of the arms and legs of her two young daughters, aged 8 and 6 years? The children are apparently healthy and normal, though the older is already beginning to have pubic hair.

R. L. Bohannon, M.D., Salina, Kan.

Answer.—It is difficult to answer this inquiry with certainty, as the tendency to hypertrichosis depends on the peculiar constitution of each person. Certain endocrine disturbances, such as hypothyroidism or hyperthyroidism, tumor of the adrenals, the ovaries or the pituitary, are associated with excessive hair growth. In others, pathologic disturbance associated with hypertrichosis is absent. This group has been thoroughly studied by many investigators, but their conclusions remain suppositions. Hypertrichosis runs in families. Therefore, one should delve into family history before coming to conclusions. If both of these children are normal and healthy and familial tendency toward hirsutism is absent the chances are that the children will have normal distribution of hair, although this cannot be absolutely determined at present.

FRÖLICH'S SYNDROME

To the Editor:—I have 2 boys, aged 14, identical twins, with Frölich's syndrome. Both have feminine contours, gynecomastia, extreme obesity and genu valgum. The testicles are descended but small. The penis in both boys is small. There is no axillary or pubic hair. They are listless, sluggish and unaggressive. The basal metabolism is minus 30 per cent; roentgenograms of the pituitary fossa reveal no abnormalities. I have them on a reducing diet (1,100 calories) and ½ grain thyroid daily. Please advise on the use of gonadotropins—the kind, the amount and frequency of administration.

M.D., Illinois.

Answer.—One of the most urgent needs with these patients is careful use of diet and thyroid. The diet should be generously adequate in its supply of high quality protein and of all recognized vitamins, since caloric restriction must be employed and may be required indefinitely.

Since only basal metabolism test data are submitted as evidence of the possible need of thyroid, serum cholesterol determination while thyroid has not been employed for at least three weeks is suggested. Also, bone age records should be obtained from the hands or the feet and from the epiphyses at the upper end of the femur. Progress in reducing an unduly high cholesterol content and in accelerating the maturing of the bones will be useful as criteria for the proper dosage of thyroid in the future. Unless the bone maturity is delayed and the cholesterol level is elevated above normal limits, it is possible that little will be achieved by the use of thyroid in spite of the low basal metabolic rate. Nevertheless, thyroid should be employed as facilitating the treatment of these patients.

It may be wise to omit treatment with gonadotropins in 14 year old twins of this type until one sees how much can be achieved by dietary control plus or minus thyroid for a period of six to twelve months. Adolescent development need not be expected just at this time. In case there is a decision either now or later to use gonadotropins, the one of most demonstrated benefit will be the chorionic gonadotropin derived from extracts of urine of pregnant women. Such material would be administered hypodermically in doses varying from 100 to 500 units three to seven times per week. The duration of treatment and size of the dose would be determined by the rate of growth of the testicles, the penis and possibly the prostate. The prostate may be expected to enlarge with effective therapy of this type. It may be wise to give such treatment in cycles of four weeks with treatment, allowing two to four weeks without treatment, rather than continuously. On this matter there is still some difference of opinion.

INCREASED SEDIMENTATION RATE

To the Editor:—I am 64 and have a systolic pressure of 152 and diastolic 106. Examination shows enlargement of the left side of the heart, but no chronic infection. Roentgenograms reveal no dental infection; my tonsils have been removed; the prostate gland is normal, and roentgenograms of the gastrointestinal tract reveal no abnormalities except for some colon atony. What is the explanation of a sedimentation rate of 38?

M.D., California.

Answer.—In general, the sedimentation rate is normal in uncomplicated hypertension with enlargement of the heart; it may increase with congestive failure, but there are apparently no signs of this. Comparable to the body temperature and the leukocyte response, the sedimentation rate test is a nonspecific test for the presence, usually, of tissue injury. An elevated sedimentation rate is usually correlated with an increase in the concentration of plasma fibrinogen. Occasionally, the increased sedimentation rate is correlated with an increase in the concentration of the serum globulins. It is suggested, therefore, that a determination be done of the total serum albumin and total serum globulin using the Howe method for separation of albumin and globulin, employing 22.5 per cent sodium sulfate. Another simple procedure is formol-gel test: add 1 drop of 40 per cent formaldehyde to 1 cc. of serum and allow the well mixed reagents to stand at room temperature twenty-four hours, after which it is read for jellification. If jellification occurs, the serum globulins are abnormal. The serum globulins may be elevated in such conditions as chronic hepatic disease, certain chronic infections and in multiple myeloma. Not infrequently, the sedimentation rate is observed to be elevated for no apparent cause and may be a sequel to a mild infection with slow decrease of the sedimentation rate following the infection. Therefore, it is well to repeat the sedimentation rate test at weekly intervals for a month to see whether or not it decreased spontaneously.

References:

Ham, T. H., and Curtis, F. C.: Sedimentation Rate of Erythrocytes: Influence of Technical, Erythrocyte, and Plasma Factors and Quantitative Comparison of Five Commonly Used Sedimentation Methods, Medicine **17**:447, 1938. (See especially Interpretation.)

Metcoff, J., and Stare, F. J.: Medical Progress: The Physiologic and Clinical Significance of Plasma Proteins and Protein Metabolites, New England J. Med. **236**:26 (Jan. 2) 1947; **236**:68 (Jan. 9) 1947. (These authors give the diseases in which the serum globulins may be elevated.)

TARNIER AXIS TRACTION

To the Editor:—Are the Tarnier axis traction forceps considered obsolete and, if not, are any of the better obstetricians using them in preference to a cesarean in delay at the pelvic inlet?

Eugene C. Lowe, M.D., Miami, Fla.

Answer.—The Tarnier axis traction forceps is still used by some obstetricians. Stander (Williams Obstetrics, ed. 7, New York, D. Appleton Century Company, Inc., 1945, p. 1,030) says, "We usually employ the Tarnier forceps using the traction rods or not according to circumstances, as we believe it better to become thoroughly familiar with one instrument than to have several for use under difficult conditions." On the other hand, the following statement appears in the De Lee-Greenhill "Textbook of Obstetrics," W. B. Saunders Company, ed. 9, Philadelphia, 1947, p. 900):

> Axis-traction is not universally recommended by obstetric authorities. We cannot share the enthusiasm of some obstetricians for axis-traction forceps. By means of Pajot's maneuver the head can be given a direction which a knowledge of the mechanism of labor will indicate; by careful observance of the tendencies of movement which the forces of nature impart to the head one can determine in which way to apply traction and one can aid one or the other as required. With the axis-traction device there are so many joints between the hand and the head that it is impossible to impress on the latter any specific motion. All the knowledge one has accumulated regarding normal and abnormal labor mechanisms goes for naught and all one can do is to pull blindly on the cross bar. In actual practice, when we have used both instruments on the same case, we have been better satisfied with the simple Simpson forceps and we seldom use any other. The Tarnier instrument has a murderous cephalic curve; cognizance of this should be taken when the handles are being screwed together, otherwise a large number of dead and injured children will result. In all axis-traction instruments there is the possibility of the curved arms or the joints bending or breaking under the force applied. De Lee witnessed three such accidents.

Practically no obstetrician willingly applies forceps for delay at the pelvic inlet because this is a high forceps operation which carries with it danger to both mother and baby. Cesarean section is definitely indicated in such cases.

LABOR IN DIABETIC PATIENTS

To the Editor:—Is premature induction of labor in a diabetic patient considered advisable? If so, when is it to be performed?

R. W. Merrill, M.D., Morris, Minn.

Answer.—One cannot be dogmatic when it comes to the treatment of pregnancy combined with diabetes. Some believe that diabetes can be adequately controlled in pregnancy, whereas others advocate the use of estrogens and progesterone plus the treatment of the diabetes. All agree that the incidence of toxemia is greater with diabetes, with concomitant serious hazards to the fetus. Babies of diabetic mothers are likely to be larger, with increased hazard due to disproportion between the baby and the mother's pelvis. For these reasons, some recommend premature induction of labor or cesarean section in these cases. Several factors in these cases are of importance: (1) A diabetic mother, if the disease is not under control, is a serious operative risk; (2) if the mother is toxic she is a much poorer risk for surgery; (3) a premature infant is a serious problem at best, and, when born of a diabetic mother, it is a still greater problem, and (4) a premature infant does not stand labor well, particularly through a poorly prepared cervix and perineum. A diabetic mother should be watched metriculously and constantly during pregnancy, from the point of view of her diabetic control and the development of toxemia. Section or induction of labor by rupture of membranes in a diabetic mother should be done only if it is the only way to ensure a live mother and baby. Medical induction may be tried if thought necessary *and if the cervix seems soft.*

DIET AFTER NEPHRECTOMY

To the Editor:—What specific diet should a patient observe after nephrectomy? A white woman, aged 36, underwent this operation in July 1948, because of chronic pyelonephritis on the right side which had begun as pyelitis of pregnancy eight years previously. Severe attacks of renal pain during the last six months necessitated the operation. The left kidney is normal. The patient is without other disease. She has had no postoperative complications, and she has had no pyuria since the operation.

M.D., Nebraska.

Answer.—In the absence of other indications for modification of diet, such as obesity, malnutrition, hypertension or renal functional impairment, the diet of a patient after nephrectomy should be normal.

"WILD CARROT" TEA

To the Editor:—A diabetic patient claims that "wild carrot" tea has helped her diabetes. She has increased her diet while taking this tea and her glycosuria has disappeared. Is this not due to a raised renal threshold to glucose produced by the "wild carrot" tea?

M.D., Ohio.

Answer.—Plant extracts have been advocated in the treatment of diabetes, but so far as is known no formal test has demonstrated that any of these extracts are of value. Obviously, before one accepts the statement of a patient that a preparation is of use in diabetes, one should conduct an experiment preferably with a diabetic animal. It should be placed on a definite diet and insulin dosage for a period sufficiently long so that the metabolism is constant, then one can add the material to be tested for a week or more and note the results and thereafter follow this period with another period of observation as a control. To accept the opinion of a patient without such criteria will lead to many false conclusions.

OBSTETRIC ANALGESIA

To the Editor:—The literature cautions against use of obstetric analgesics during the last half of labor. An accurate estimation of this time factor, in my experience, is impossible. What harmful effect on the baby is apt to occur if say 4½ grains (0.29 Gm.) of "nembutal" (pentobarbital sodium) and 1/150 grain of scopolamine hydrobromide are given within one or two hours preceding delivery?

Glenn T. Howard, M.D., Pearsall, Texas.

Answer.—One must face the fact that any narcotic or analgesic given to the mother within one-half to two hours of delivery may, but does not necessarily, suppress the respiratory center of the fetus as it does in the mother. Some of these infants are difficult to revive. No one can predict delivery by the clock: one can only try not to give sedatives except perhaps gas unless the delivery is expected to be at least two hours away. When not sure, either give nothing or give repeated small doses of sedative. In the case cited, if the time of delivery could not be estimated, 1½ grains (0.0975 Gm.) of "nembutal" repeated would be safer than 4½ grains at one time. Patients are difficult to control when under the influence of scopolamine bromide.

Everything else being normal, that is, pelvis, size of baby and strength of pains, one can reasonably expect a half-hour

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ANESTHESIOLOGY WITHIN THE VETERANS ADMINISTRATION

Chairman's Address

RALPH M. TOVELL, M.D.
Hartford, Conn.

Rather than discuss in general terms the present status or future of the specialty, I have elected to report on progress in anesthesiology within the Veterans Administration. It seemed that this occasion was an auspicious one to outline developments in a governmental organization where revolutionary changes in practice have occurred within the last two years. Prior to the appointment of General Omar N. Bradley as Administrator and Major General Paul R. Hawley as Chief Medical Director, medical organization within the agency had improved little since World War I. Throughout the years between World War I and II neither physicians nor technicians specializing in anesthesiology were employed on a full time basis.

With the enactment of Public Law 293 by the Seventy-Ninth Congress on Jan. 3, 1946, establishing a department of medicine and surgery in the Veterans Administration, the foundation was laid for a far reaching reorganization of facilities for medical care. The objective was to provide medical care second to none for veterans and at the same time provide facilities for teaching and training of medical personnel returning to civilian life after World War II. By this law, physicians, dentists and nurses were no longer subject to the rules and regulations of the Civil Service, although they were to receive the benefits of the Civil Service Retirement Act of May 22, 1920, as amended. Basic requirements for physicians eligible for employment were outlined as follows: (1) citizenship in the United States, (2) graduation from a school of medicine approved by the Administrator, (3) license to practice as a physician in a state or territory of the United States or in the District of Columbia, (4) adherence to the physical requirements of the department and (5) professional qualifications to meet accepted national standards. A new scale of salaries commensurate with training and experience was established. Specialists certified by the American specialty boards and the Veterans Administration were to be paid an additional 25 per cent of base pay up to a limit of $11,000 per year. It is well to emphasize that anesthesiologists were accorded opportunity equal to that of other specialists in reference to income which they might receive. This situation was one of unique advantage to our specialty. The trend toward all too frequent exploitation was avoided. Coupled with this advantage, there was the opportunity and responsibility to provide service to patients and training for residents. The degree to which these responsibilities have been assumed is a measure of success and, at the same time, it is a measure of the need for continuing effort toward an ideal.

The organization of the office of the Chief Medical Director included Professional Services, made up of a representative from each of the specialties of medicine and surgery. Each member is known as a director of his particular division or section. The majority of these persons are part time employees, but in the central office there is a full time cadre who carry on routine business, put into effect the policies promulgated by the division and maintain close contact with all members of the division in order to provide coordination of effort. A parallel organization now exists in each of the thirteen branch offices, and for each branch a branch section chief of anesthesiology has been appointed. These men have unstintingly diverted their efforts from their practices and have given excellent service. In both central and branch offices, the professional service division is operational as well as advisory. Its members visit hospitals to insure adherence to approved practices. Branch section chiefs, when visiting hospitals, check on programs for teaching and contribute to those programs by conduction of clinics and seminars. Their duties, in addition, include evaluation of professional personnel, giving advice on appointments and transfers and procurement of equipment and supplies. Policies regarding construction and remodeling of hospitals are usually accomplished by joint action of the members of the division. Opportunity has been afforded for meetings of branch section chiefs of anesthesiology, at which problems are discussed and policies established.

It has been a policy for each general medical and surgical hospital to organize a section on anesthesiology with a chief or acting chief in charge. His duties are to provide coverage in anesthesia, inhalation and intravenous therapy, blood transfusions and diagnostic and therapeutic procedures anesthetic in nature. These duties include preoperative evaluation of patients and administration of preliminary medication and anesthetics, followed by postoperative care of patients whose condition is referable to anesthesia.

Public law 293 authorized establishment of a system of residencies. Through the activities of the chief of the division of research and education, liaison has been effected with medical schools to provide part time consultants and attending physicians in each specialty to nearby Veterans Administration hospitals. This arrangement has worked well and has been particularly advantageous in helping to bridge the gap between

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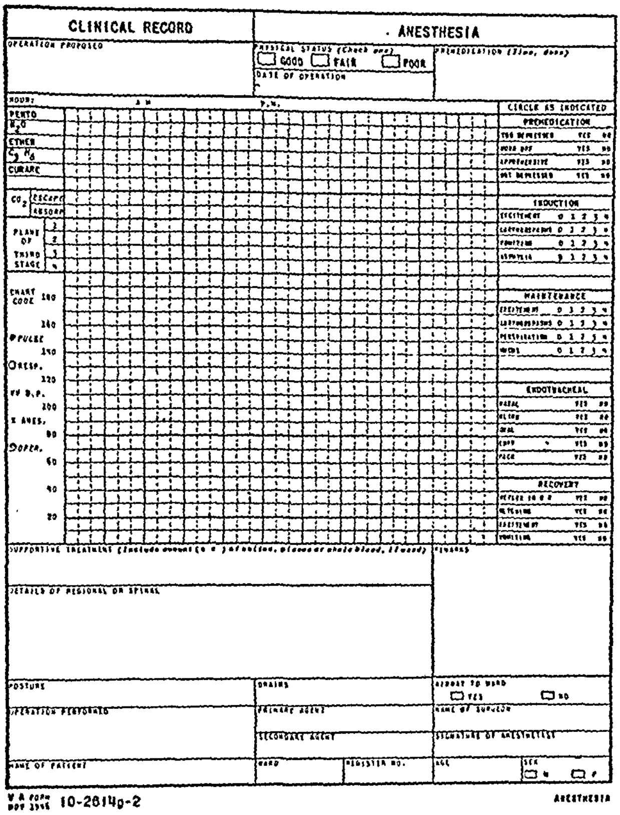
Director of Anesthesiology, Veterans Administration, Hartford Hospital.

Read before the Section on Anesthesiology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

demand and supply of anesthesiologists in terms of coverage of the constantly increasing work load and in terms of teaching and training of residents. It is interesting to note that as of Jan. 31, 1948, twenty-five hospitals had received temporary approval for residency in anesthesiology. Sixty-three residents were enrolled; one full time employee was receiving training and twenty-nine vacancies existed.



CLINICAL RECORD · ANESTHESIA

OPERATION PROPOSED

PHYSICAL STATUS (Check one) ☐ GOOD ☐ FAIR ☐ POOR

PREMEDICATION (Time, dose)

DATE OF OPERATION

HOUR: A.M. P.M.

PENTO
N_2O
ETHER
C_3H_6
CURARE
CO_2 ESCAPE
ABSORP
PLANE OF THIRD STAGE 1 2 3 4
CHART CODE 180 160 140 120 100 80 60 40 20
PULSE
RESP.
B.P.
X ANES.
OPER.

CIRCLE AS INDICATED

PREMEDICATION
[illegible] YES NO

INDUCTION
EXCITEMENT 0 1 2 3 4
LARYNGOSPASM 0 1 2 3 4
VOMITING 0 1 2 3 4
CYANOSIS 0 1 2 3 4

MAINTENANCE
EXCITEMENT 0 1 2 3 4
LARYNGOSPASM 0 1 2 3 4
[illegible] 0 1 2 3 4
[illegible] 0 1 2 3 4

ENDOTRACHEAL
NASAL YES NO
[illegible] YES NO
ORAL YES NO
CUFF YES NO
PACK YES NO

RECOVERY
[illegible] YES NO
[illegible] YES NO
EXCITEMENT YES NO
VOMITING YES NO

SUPPORTIVE TREATMENT (Include amount (c.c.) of saline, plasma or whole blood, if used)

REMARKS

DETAILS OF REGIONAL OR SPINAL

POSTURE

DRAINS

RETURN TO WARD ☐ YES ☐ NO

OPERATION PERFORMED

PRIMARY AGENT

NAME OF SURGEON

SECONDARY AGENT

SIGNATURE OF ANESTHETIST

NAME OF PATIENT

WARD

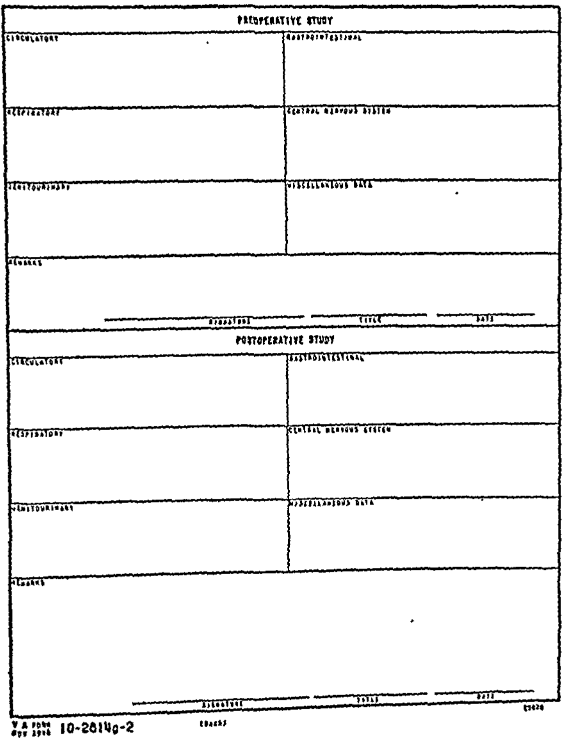
REGISTER NO.

AGE

SEX ☐ M ☐ F

V A FORM NOV 1946 10-2814g-2 ANESTHESIA

Fig. 1.—Face of anesthetic record



PREOPERATIVE STUDY

CIRCULATORY

GASTROINTESTINAL

RESPIRATORY

CENTRAL NERVOUS SYSTEM

GENITOURINARY

MISCELLANEOUS DATA

REMARKS

SIGNATURE TITLE DATE

POSTOPERATIVE STUDY

CIRCULATORY

GASTROINTESTINAL

RESPIRATORY

CENTRAL NERVOUS SYSTEM

GENITOURINARY

MISCELLANEOUS DATA

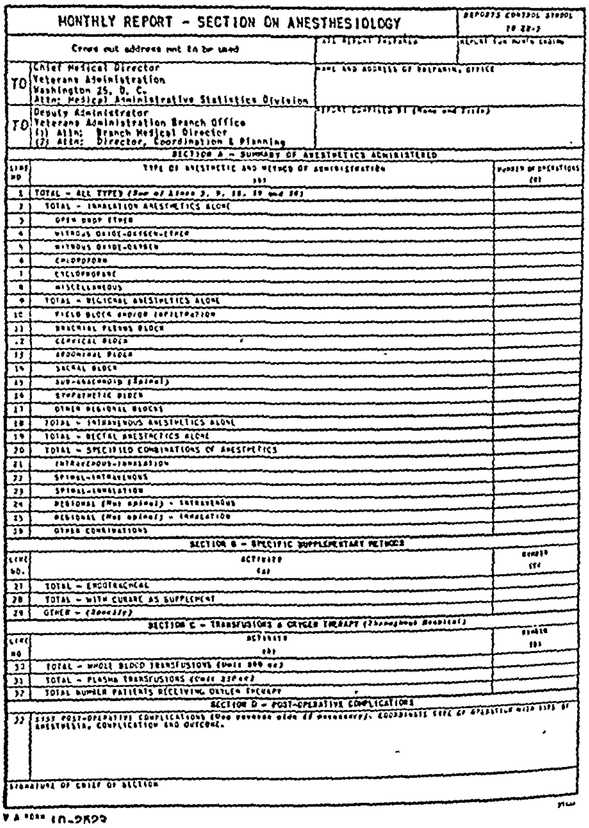
REMARKS

SIGNATURE TITLE DATE

V A FORM NOV 1946 10-2814g-2

Fig. 2.—Reverse side of anesthetic record

As of March 5, 1948, five certified anesthesiologists were connected with hospitals as full time employees and forty-one other certified anesthesiologists were serving in the capacity of consultants or attending anesthesiologists on a part time basis. In addition, sixty-eight anesthesiologists were employed on a full time basis and twenty-four were cooperating as consultants or attending anesthesiologists on a part time basis. These men are progressing toward certification within the near or foreseeable future. The figures indicate a major change in coverage, but one cannot gloat over the improvement because many hospitals are still lacking the services of men well trained in the specialty. The situation is a challenging one, demanding our best efforts and utmost cooperation in providing adequate coverage. The need is acute, because officers in the Army and Navy assigned to the Veterans Administration are now completing their tours of duty. An appreciable number of these men have shown zeal and aptitude, and their services have been of real value. Their replacement will be difficult, but nevertheless it is imperative. Your cooperation in providing a solution to the problem is invited.



MONTHLY REPORT - SECTION ON ANESTHESIOLOGY

REPORTS CONTROL SYMBOL [illegible]

Cross out address not to be used

TO
Chief Medical Director
Veterans Administration
Washington 25, D. C.
Attn: Medical Administrative Statistics Division

TO
Deputy Administrator
Veterans Administration Branch Office
(1) Attn: Branch Medical Director
(2) Attn: Director, Coordination & Planning

NAME AND ADDRESS OF [illegible] OFFICE

REPORT CERTIFIED BY (Name and Title)

SECTION A - SUMMARY OF ANESTHETICS ADMINISTERED

LINE NO.	TYPE OF ANESTHETIC AND METHOD OF ADMINISTRATION (a)	NUMBER OF OPERATIONS (b)
1	TOTAL - ALL TYPES (Sum of lines 2, 9, 18, 19 and 20)	
2	TOTAL - INHALATION ANESTHETICS ALONE	
3	OPEN DROP ETHER	
4	NITROUS OXIDE-OXYGEN-ETHER	
5	NITROUS OXIDE-OXYGEN	
6	CHLOROFORM	
7	CYCLOPROPANE	
8	MISCELLANEOUS	
9	TOTAL - REGIONAL ANESTHETICS ALONE	
10	FIELD BLOCK AND/OR INFILTRATION	
11	BRACHIAL PLEXUS BLOCK	
12	CERVICAL BLOCK	
13	[illegible] BLOCK	
14	SACRAL BLOCK	
15	SUB-ARACHNOID (Spinal)	
16	SYMPATHETIC BLOCK	
17	OTHER REGIONAL BLOCKS	
18	TOTAL - INTRAVENOUS ANESTHETICS ALONE	
19	TOTAL - RECTAL ANESTHETICS ALONE	
20	TOTAL - SPECIFIED COMBINATIONS OF ANESTHETICS	
21	INTRAVENOUS-INHALATION	
22	SPINAL-INTRAVENOUS	
23	SPINAL-INHALATION	
24	REGIONAL (Not spinal) - INTRAVENOUS	
25	REGIONAL (Not spinal) - INHALATION	
26	OTHER COMBINATIONS	

SECTION B - SPECIFIC SUPPLEMENTARY METHODS

LINE NO.	ACTIVITY (a)	NUMBER (b)
27	TOTAL - ENDOTRACHEAL	
28	TOTAL - WITH CURARE AS SUPPLEMENT	
29	OTHER - (Specify)	

SECTION C - TRANSFUSIONS & OXYGEN THERAPY (Throughout Hospital)

LINE NO.	ACTIVITY (a)	NUMBER (b)
30	TOTAL - WHOLE BLOOD TRANSFUSIONS (Units 500 cc)	
31	TOTAL - PLASMA TRANSFUSIONS (Units 250 cc)	
32	TOTAL NUMBER PATIENTS RECEIVING OXYGEN THERAPY	

SECTION D - POST-OPERATIVE COMPLICATIONS

33 LIST POST-OPERATIVE COMPLICATIONS (Use reverse side if necessary). COORDINATE TYPE OF OPERATION WITH TYPE OF ANESTHESIA, COMPLICATION AND OUTCOME.

SIGNATURE OF CHIEF OF SECTION

V A FORM 10-2822

Fig. 3.—Form for monthly report

In order for any program of training to be successful, it was realized that standard forms for recording each anesthetic administered were necessary. With the active cooperation of the branch section chiefs, such a form (figs. 1 and 2) was developed and made available to each hospital. Anesthetists attached to certain hospitals have requested permission to use other forms, embodying facilities for coding and punching. These requests have been granted. In all hospitals monthly reports (fig. 3) have been prepared on a standard basis and submitted to the central office for statistical evaluation. These reports have proved of value in determining distribution of work and in estimating needs for equipment and skilled coverage. Agents and methods employed during the last six months of 1947 are indicated in tables 1 through 5. These tables reflect the magnitude of the work and the distribution of agents and methods.

Comparison of specific supplementary methods employed in January 1947 with those in January 1948 reveals that endotracheal intubations increased from 815 to 1,120. Instances of employment of curare increased from 288 to 663. In January 1947, 5,672 transfusions and 2,217 units of plasma were administered, whereas in January 1948, 7,757 transfusions and 1,047 units of plasma were given. In the same months the total number of anesthetics increased from 12,830 to 16,425, whereas the total number of patients receiving oxygen therapy increased from 1,957 to 2,606. It is fair to state that, without increased skill in coverage, the change in work load to a much higher incidence of major operative procedures would not have been possible.

Last year at the Annual Session, this Section initiated an Anesthesia Study Commission, with the Chairman of the Committee empowered to report progress at this meeting. So far as the Veterans Administration is concerned, attempt has been made to cooperate by establishment of a parallel organization including each of the branch section chiefs as members responsible for the collection of data in their own areas. Mechanisms have been set up whereby each chief will be notified of untoward events occurring in hospitals, with responsibility resting with him to investigate each incident. It is the prerogative of each chief to establish an anesthesia study commission in his branch as the situation demands.

Table 1.—*Anesthetics Administered in Hospitals of the Veterans Administration July Through December 1947*

Types	Distribution, Percentage	Number of Operations
1. Total	100.0	91,512
2. Inhalation alone	10.0	9,172
3. Regional alone	74.1	67,810
4. Intravenous alone	4.8	4,421
5. Rectal alone	0.1	45
6. Specified combinations	11.0	10,064

Throughout the year 1947 and continuing into 1948, monthly reports have included lists of complications occurring in each hospital. These lists are studied carefully by each branch section chief, and he is at liberty to investigate and recommend remedial measures aimed at prevention and correction. It has been a task of some magnitude to establish this system of reporting, and, at this time, it would be premature to attempt a detailed report correlating such factors as operation and anesthetic agents and methods employed, with complications including incidence of recovery and fatality. An unwarranted high incidence of untoward reactions to anesthetics topically applied preliminary to endoscopic examination of the larynx, bronchi, esophagus or stomach was noted. A technical bulletin on this subject was prepared and distributed. By this means, attempt was made to acquaint personnel with the relative hazards of agents and methods, and safeguards were promulgated. Likewise, a bulletin was issued dealing with the intravenous administration of fluids, the hazards of air emboli and their prevention. At the present time a bulletin is being prepared for issue on the subject of mechanical resuscitators and their operation, particularly for patients suffering from poliomyelitis. These efforts are a part of the educational program, and it is the intention to continue along these lines, enlisting the assistance of eminent educators interested in each topic prepared.

Table 2.—*Anesthetics Administered by Inhalation in Hospitals of the Veterans Administration July Through December 1947*

Types	Distribution, Percentage	Number of Operations
1. Total	100.0	9,172
2. Drop ether	4.2	389
3. Nitrous oxide-oxygen and ether	46.2	4,231
4. Nitrous oxide and ether	11.0	1,006
5. Chloroform	1.0	90
6. Cyclopropane	22.5	2,068
7. Miscellaneous	15.1	1,388

Table 3.—*Regional Anesthetics Administered in Hospitals of the Veterans Administration July Through December 1947*

Types	Distribution, Percentage	Number of Operations
1. Total	100.0	67,810
2. Field block-infiltration	55.5	37,714
3. Brachial plexus block	1.1	737
4. Cervical block	0.4	250
5. Abdominal block	0.3	173
6. Sacral block	2.0	1,344
7.	33.3	22,570
8.	2.5	1,701
9. Other regional blocks	4.9	3,321

SUMMARY AND CONCLUSIONS

The Veterans Administration recognizes the need for adequate anesthetic coverage. Attempt has been made to provide it. A teaching program has been instituted, and progress of it has been fostered, by efforts in many directions. Libraries in hospitals have been augmented by procurement of carefully selected books. Anesthetists have been encouraged to attend meetings and participate by presentation of papers. A number of papers have been published, and others are in the process of publication. Exhibits have been prepared, one of which was shown at the Annual Meeting of the American Medical Association in 1947. It was our intention to have another exhibit for this meeting, but allocation

Table 4.—*Specified Combinations of Anesthetics Administrated in Hospitals of the Veterans Administration July Through December 1947*

Types	Distribution, Percentage	Number of Operations
1. Total	100.0	10,064
2. Intravenous, inhalation	58.9	5,934
3. [illegible]	18.5	1,858
4.	4.4	438
5.	7.1	713
6. Regional (not spinal), inhalation	1.3	130
7. Other combinations	9.8	991

Table 5.—*Specific Supplemental Methods Employed in Hospitals of the Veterans Administration July Through December 1947*

Type	Number
1. Endotracheal intubations	6,155
2. Curare for relaxation	3,245
3. Blood transfusions (500 cc.)	42,186
4. Plasma transfusions (250 cc.)	17,104
5. Patients receiving oxygen therapy	13,406

of space could not be effected. Accomplishments have been real, but ideals have not yet been achieved. Problems needing solution exist. The paramount one is procurement of personnel. The cooperation of the profession at large will be needed if success is to be attained. It is hoped that cooperation will be extended on a continuing but accentuated basis.

My gratitude and thanks are extended to the many working within the Veterans Administration and those participating on a part time basis for their valuable suggestions and advice and for their generous cooperation and untiring faithful effort.

ANTICOAGULANT THERAPY OF CORONARY THROMBOSIS WITH MYOCARDIAL INFARCTION

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and
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The possibility of preventing the extension of coronary thromboses and the development of mural thrombi in the presence of myocardial infarction by the use of anticoagulants was suggested by Solandt, Nassim and Best[1] in 1938. These investigators were able to prevent the development of both coronary thrombi and of intracardiac mural thrombi under conditions in which such thrombi are usually produced experimentally in animals, by the use of the anticoagulant, heparin. Their observations were not applied to human beings on any significant scale because of the difficulties and the risk felt to be inherent in the use of heparin clinically. In the years 1945 and 1946, Wright,[2] Nichol and Page[3] and Peters, Guyther and Brambel[4] reported encouraging results following the use of the anticoagulant "dicumarol" in the treatment of coronary thrombosis with myocardial infarction in human beings. These reports were preliminary in nature, since only small numbers of cases were reported. However, the uniformly favorable results appeared to justify a more extensive study of the use of anticoagulants in the treatment of coronary thrombosis.

Accordingly, in the spring of 1946, the Board of Directors of the American Heart Association authorized the formation of the Committee for the Evaluation of Anticoagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction. This committee is composed of internists with special interest in cardiovascular diseases associated with the sixteen hospitals which have contributed cases to this study. Workers in several additional institutions have participated in an advisory or consulting capacity. The participating hospitals and the responsible investigators, the consultants and the staff from the central laboratory are listed in table 1.

Each investigator has been assisted by a team of residents, fellows and associates from his staff. Full credit must be accorded each of these workers, whose wholehearted cooperation has been indispensable to the success of this study. One thousand cases of coronary occlusion and myocardial infarction have been studied under the conditions of this investigation.

PLAN OF THE STUDY

Slightly fewer than one half of the 1,000 patients have been treated by conventional methods alone. The others have had anticoagulant therapy in addition to conventional treatment. A record of each case has been prepared in detail on master forms by the responsible investigator and his associates and forwarded to the central office of the committee at the New York Hospital. The master forms are being subjected to intensive statistical analysis, and a definitive report on the 1,000 cases will be prepared as promptly as the analysis will permit. The present report includes data obtained from analysis of the first 800 cases reported to the central laboratory. Although it is possible that the addition of the last 200 cases, and other later revisions, may change the figures somewhat, it is unlikely that the conclusions will be altered significantly, since the relationship of the control and treated groups as to deaths and thromboembolic complications has remained relatively stable as the sample has increased in size.

Three hundred and sixty-eight patients admitted to the participating services on even days received conventional therapy and constitute "the control group." Four hundred and thirty-two patients admitted on odd days received anticoagulants in addition to conventional therapy and constitute "the treated group."

The principles used as guides in the administration of "dicumarol" and heparin were as follows:

(*a*) Heparin may be given for the first forty-eight hours or more if desired.

(*b*) Prothrombin determinations are to be done each day, and no "dicumarol" should ever be ordered unless the morning prothrombin report is available.

(*c*) "Dicumarol" in the amount of 200 to 300 mg. daily should be given until the prothrombin time is 30 seconds.

(*d*) "Dicumarol" in the amount of 50 to 100 mg. daily should be given if the prothrombin time is between 30 and 35 seconds.

(*e*) "Dicumarol" is withheld if the prothrombin time is 35 seconds or more. Then, no drug is given until the prothrombin time is again down to 30 seconds or less, after which the drug is again given cautiously in 100 mg. doses.

(*f*) The Link-Shapiro technic, with undiluted whole plasma, or the Quick method is to be used for determining the prothrombin clotting time, and it is suggested that the Link-Shapiro method with 12.5 per cent diluted plasma be employed as an additional check or safeguard. All prothrombin times are given in terms of the Link-Shapiro (undiluted) method.

(*g*) Unless contraindications arise, the "dicumarol" therapy is to be continued in the chosen cases over a minimum period of thirty days, preferably thirty days after the last thromboembolic episode.

(*h*) In instances of hemorrhagic manifestations, the use of synthetic vitamin K preparations, in doses of 60 to 75 mg., and transfusions of fresh whole blood (may be citrated) are recommended.[5]

A comparison of the patients in the "control" group with those in the "treated" group shows a striking similarity in regards to age, history of previous infarction and estimated severity of the present attack, as shown in table 2. The average age in the control group was 60 years and that in the treated group 59 years. The average age in the control group of male patients was 58.9 years and that in the treated group 57.2 years. For the female patients the average age in the control

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Published simultaneously in the *American Heart Journal*.

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Progress report on the statistical analysis of the first 800 cases studied by the Committee for the Evaluation of Anticoagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction, American Heart Association.

Read before the Joint Meeting of the Section on Internal Medicine and the Section on Experimental Medicine and Therapeutics at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 25, 1948.

[1] Solandt, D. Y., and Best, C. H.: Heparin and Coronary Thrombosis in Experimental Animals, Lancet **2**: 130, 1938. Solandt, D. Y.; Nassim, R., and Best, C. H.: *Production and Prevention of Cardiac* Mural Thrombosis in Dogs, Lancet **2**: 592, 1939.

[2] (*a*) Wright, I. S.: Experiences with Dicumarol in the Treatment of Coronary Thrombosis, Proc. Am. Federation Clin. Research **2**: 101, 1945; (*b*) Experiences with Dicumarol (3,3′ Methylenebis-[4-Hydroxycoumarin]) in the Treatment of Coronary Thrombosis with Myocardial Infarction, Am. Heart J. **32**: 20, 1946.

[3] Nichol, E. S., and Page, S. W., Jr.: Dicumarol Therapy in Acute Coronary Thrombosis: Results in Fifty Attacks, J. Florida M. A. **32**: 365, 1946.

[4] Peters, H. R.; Guyther, J. R., and Brambel, C. E.: Dicumarol in Acute Coronary Thrombosis, J. A. M. A. **130**: 398 (Feb. 16) 1946.

[5] From the instructions issued to each participating team (slightly modified).

group was 64.1 years and in the treated group 64.6 years. In this series of 800 cases, the average for female patients was approximately 6.4 years more than that for the male patients.

In analyzing the two groups for a history of one or more previous infarctions, it was observed that 24 per cent of the control group and 22 per cent of the treated group had had one or more previous infarctions.

Table 1.—*Participating Hospitals and Responsible Investigators, Consultants and Staff from Central Laboratory*

Participating Hospitals and Investigators

Hospitals	Investigators
Bellevue Hospital, New York	John E. Deitrick, M.D.
Beth Israel Hospital, Boston	Herrman L. Blumgart, M.D.
Bronx Veterans Hospital	Louis A. Kapp, M.D.
Cincinnati General Hospital	John McGuire, M.D. Helen Glueck, M.D.
Cleveland City Hospital	Roy W. Scott, M.D.
Henry Ford Hospital, Detroit	F. Janney Smith, M.D.
Jackson Memorial Hospital, Miami	E. Sterling Nichol, M.D.
Lakeside Hospital, Cleveland	Joseph Hayman Jr., M.D. Harold Feil, M.D.
Massachusetts General Hospital	Howard B. Sprague, M.D.
Michael Reese Hospital, Chicago	Louis N. Katz, M.D.
Mount Zion Hospital, San Francisco	John J. Sampson, M.D.
Pennsylvania Hospital, Philadelphia	Joseph B. Vander Veer, M.D.
Peter Bent Brigham Hospital	Samuel A. Levine, M.D.
Rhode Island Hospital, Providence	Frank B. Cutts, M.D.
San Francisco County Hospital	John J. Sampson, M.D.
The New York Hospital	Irving S. Wright, M.D. Harold J. Stewart, M.D.

Consultants

Ralph S. Overman, Ph.D.	Nelson W. Barker, M.D.
Charles E. Brambel, Ph.D.	Grace Goldsmith, M.D.

Central Laboratory

Irving S. Wright, M.D., Chairman of Study
Charles D. Marple, M.D., Coordinator
Dorothy F. Beck, Ph.D., Statistician

An estimate of the severity of the attack was made for each patient at the time of diagnosis and recorded as mild, moderate or severe. Twenty-three per cent of the control group and 30 per cent of the treated group were classified as having severe attacks. Although this classification is admittedly arbitrary, the results suggest that the treated group contains a somewhat greater proportion of severely ill patients. The control and treated groups were also closely similar when the medical histories of cardiovascular diseases and the locations of their original infarcts were compared.

Table 2.—*Composition of Sample* *

Item Compared	Control Group (Even Days)	Treated Group (Odd Days)
Number of cases	368	432
Average age	60 yr.	59 yr.
Proportion male	77%	76%
One or more previous infarctions	24%	22%
Illness "severe" at onset	23%	30%
Anticoagulant therapy received (exceptions as noted)	88% no anticoagulants; 12% some anticoagulants (primarily after complications)	81% "dicumarol" without heparin; 14% "dicumarol" plus some heparin; 3% no anticoagulants because of renal or hepatic disease or hemorrhage; 2% no anticoagulants because of miscellaneous errors

* Total group: 800 patients with coronary occlusion with myocardial infarction surviving the first day of hospitalization.

Eighty-eight per cent of patients in the control group received no anticoagulant, but 12 per cent did receive some anticoagulant therapy, often for short periods only. Anticoagulants were administered to patients in the control group following the development of a thromboembolic complication in 3 cases out of 5 and in the remaining cases because of pressure on the part of the family or a private physician[6] or miscellaneous reasons. Of the treated group, 81 per cent received "dicumarol" only, while 14 per cent received "dicumarol" and some heparin. In 3 per cent of the "treated" patients no anticoagulants were given because of concurrent renal or hepatic disease or because of hemorrhagic conditions, and 2 per cent received no anticoagulant because of miscellaneous errors.

In the computation of the rates on which all of the charts are based, small and conservative corrections were made in order to simplify the presentation. In the control group the rates are corrected for exceptions to the "no anticoagulant" rule. Rates as shown are those which it is estimated would have occurred if no subject in the control group had received any anticoagulant. They differ only slightly from the data as actually reported and are believed to present a truer picture of rates without anticoagulants. In the treated group the rates are corrected for erroneous omissions of anticoagulants. There is evidence that with more intensive and inclusive anticoagulant therapy, the rates for death and complications in the treated group would have been lower than those shown. No correction was made for those patients from whom anticoagulants were withheld because of specific contraindications. These omissions are considered to be disadvantages inherent in this type of treatment.[7] In both groups all rates for thromboembolic complications and hemorrhagic manifestations, as stated in this interim report, refer to conditions diagnosed clinically. Statistics based on postmortem observations were not yet available at the time of writing, but were being analyzed.

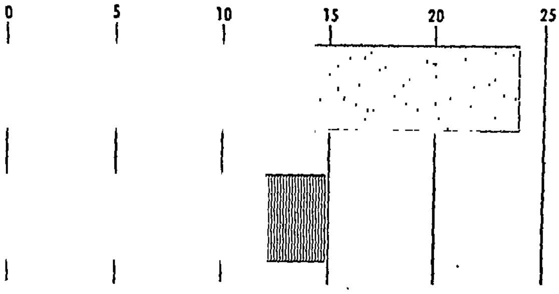

Fig. 1.—Percentage of deaths in the control and treated groups studied, indicated by the horizontal row of figures at the top. The upper bar shows results in the control group (24 per cent), and the lower bar in the treated group (14.9 per cent), one-third fewer deaths than in the control group. The hatched areas indicate deaths after one or more thromboembolic complications, and the darkened areas indicate deaths not preceded by a thromboembolic complication.

Figure 1 illustrates the contrast between the death rates in the control group and in the group that received anticoagulant therapy. Twenty-four per cent of the control patients died, whereas 15 per cent of the treated patients died. Thus, somewhat more than one third of the subjects who would have died without anticoagulant therapy survived the specific attack under consideration when anticoagulants were given. This difference is statistically significant.[8] Further examination indicates that the greatest improvement was achieved in patients who had suffered one or more thromboembolic complications prior to death. Such deaths occurred in roughly 10 per cent of the control group, but in only 3 per cent of the treated group. Death not preceded by a clinically recognized thromboembolic complication occurred in approximately 14 per cent in the controls as against 12 per cent in the treated group. As previously anticipated, anticoagulants reduced the death rate largely by reducing the incidence of those thromboembolic complications which, directly or indirectly, result in death.

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[6] This factor became intensified as the study progressed.

[7] These corrections were made by assuming that if anticoagulants had been completely withheld from all control patients receiving anticoagulants they would have experienced at least as many further complications and would have died at least at the same rate as did control patients of comparable age who received no anticoagulants at any time in approximately comparable circumstances. If actual rates for subgroups among these patients for whom exceptions were made did not already exceed these estimates, the estimates were substituted for the actual data for these particular subgroups. An appropriate modification of this correction procedure was applied in the case of the treated group and for hemorrhagic manifestations in both groups. The resulting corrected figures are portrayed graphically and referred to in the text without reference to the corrections or to the exceptions in treatment. The corrections for exceptions proved to be small and sometimes were completely without effect on the rates. They do not alter at any point the basic differences between the groups from which conclusions are drawn.

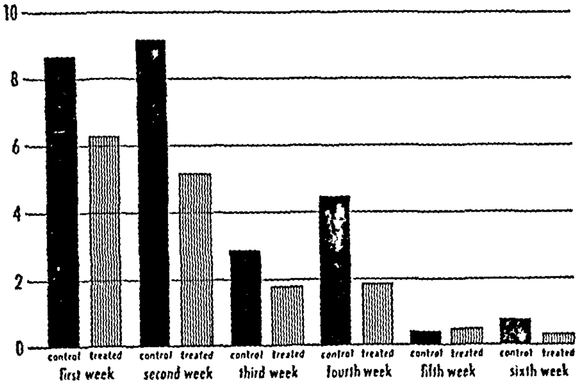

Fig. 2.—Death rates by week of illness. The number of deaths per hundred survivors from the previous week is shown in the vertical column of figures on the left.

The death rates by weeks of illness, as shown in figure 2, were highest during the first two weeks, but were still considerable during the third and fourth week. For each period the death rate for the control patients was observed to be significantly greater than that for the treated group. These figures indicate that anticoagulant therapy, if not used before, should be begun even as late as the second or third week after a myocardial infarction has occurred—or later if complications have developed—and, secondly, that, to give maximal protection, anticoagulant treatment should be continued for at least four weeks after the last thromboembolic episode.

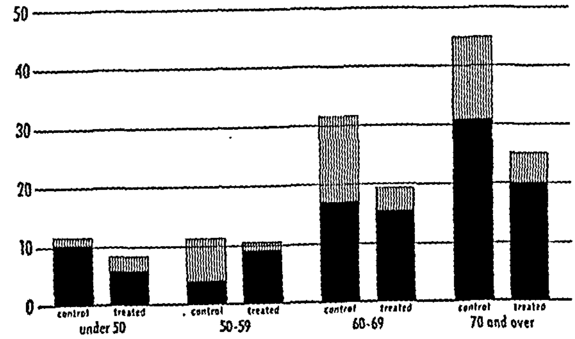

Fig. 3.—Death rates by age groups. The percentage of patients who died is shown in the vertical column of figures. The darkened areas indicate deaths not preceded by a thromboembolic complication, and the hatched areas indicate deaths after one or more thromboembolic complications.

Figure 3 presents the death rates by major age groups. The greatest benefits in the reduction of the mortality rate are in patients 60 years or older. These statistics show that the therapeutic effect of anticoagulants is sufficiently important that they should be used in the older age groups. Hemorrhagic complications have been so few and so mild throughout the entire study and the benefits of treatment of the older age group are so pronounced that we do not hesitate to prescribe anticoagulants for older patients. It should be recognized, however, that older patients have a higher incidence of unrelated complications and that careful consideration of such factors is mandatory. While the crude death rates for patients under 59 in both the treated and the control group did not show a significant difference, it will be seen in figure 6 that the incidence of thromboembolic complications is high in these age groups and that the treated patients show a much lower incidence of thromboembolic complications. Such thromboembolic complications may not only be serious incidents in themselves, but they may result in such serious permanent disabilities as hemiplegia (following cerebral emboli), chronic venous insufficiency (following thrombophlebitis) or residual myocardial damage (following repeated myocardial infarction).

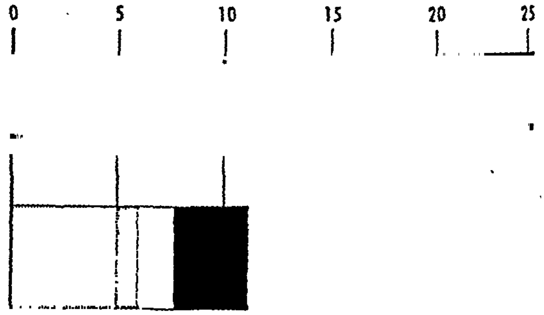

Fig. 4.—Percentage of cases in which one or more thromboembolic complications developed and the time when the complications occurred. Cases were classified by the status of anticoagulant therapy at the time of the first complication. The upper bar is of the control group and the lower bar of the treated group. The horizontal row of figures at the top indicates the percentage. The checked areas indicate complications occurring after the third day of anticoagulant therapy; the dotted areas indicate complications occurring during the first three days of anticoagulant therapy, and the darkened areas indicate complications occurring while the patient was not receiving anticoagulants.

Figure 4 shows the [illegible] of cases in which one or more [illegible] developed. In 25 per cent of the control patients, in contrast to only 11 per cent of the treated patients, at least one such complication developed. This difference is statistically significant. However, of these treated patients, 3.5 per cent presented their first complication before they had received anticoagulants[9] and 1.5 per cent presented their first thromboembolic complication during the first three days of anticoagulant therapy, before "dicumarol" is ordinarily fully effective. Thus 5 per cent presented thromboembolic complications when anticoagulant therapy could not have been fully effective and only 6 per cent presented thromboembolic complications while they were actually under the full effect of anticoagulant therapy.

The number of thromboembolic complications per hundred cases is presented in figure 5. Among each hundred cases in the control group, thirty-six thromboembolic complications were diagnosed clinically.

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[8] The term "statistically significant" is used throughout the text to mean that the chances that two random samples from the same population would yield on the basis of chance alone differences as great as those observed and in the same direction are less than 1 in 100. In most instances the chances of obtaining these differences in two samples from the same universe are in fact much less than 1 in 100—in the case of thromboembolic complications, less than 1 in a 1,000.

[9] Included in this group are those who never received anticoagulants because of contraindications.

whereas among each hundred cases in the treated group, only fourteen thromboembolic complications were so diagnosed. In other words, the patients in the "treated group" experienced slightly more than one third as many thromboembolic complications as did the control group, a contrast that is again highly significant statistically. This contrast is further emphasized by the following facts. It is noted that five thromboembolic complications per hundred cases developed while the patients were not receiving anticoagulant therapy and two and five-tenths thromboembolic complications per hundred cases developed during the first three days of anticoagulant therapy when "dicumarol" is not considered efficacious. Actually, then, only six and five-tenths thromboembolic complications per hundred treated patients occurred in patients who were receiving the full therapeutic effect of anticoagulant therapy. This figure includes complications in some patients whom we would not now consider to have been having adequate treatment at the time the complication occurred. Autopsies were conducted on 48 per cent of the patients who died among the 800. The autopsy records for these cases are being studied intensively and will yield further light on the effects of anticoagulant therapy on thromboembolic complications.

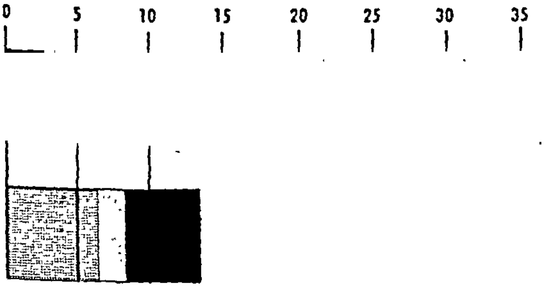

Fig. 5.—Number of thromboembolic complications. The upper bar is of the control group and the lower bar of the treated group. The horizontal row of figures at the top indicates the number of complications per hundred cases. The dotted area indicates the complications occurring during the first three days of anticoagulant therapy; the checked areas indicate complications occurring after the third day of anticoagulant therapy, and the darkened areas indicate complications occurring while the patient was not receiving anticoagulants.

The highest incidence of thromboembolic complications among the control cases occurred in the age group between 50 and 59 (fig. 6) in distinct contrast to the death rate by age groups (fig. 3). The explanation for this contrast may be that, while the younger patients suffer numerous thromboembolic complications and while some of these complications result in serious damage, the younger patients are able to survive them. Thus a person under 60 may have three or four thromboembolic complications without a fatal episode, whereas an older patient may succumb to the initial attack and hence not have an opportunity of experiencing repeated thromboembolic attacks. This chart clearly indicates the value of anticoagulant therapy in preventing thromboembolic complications in all age groups. Within the treated group, a distinction is made between patients actually receiving anticoagulants and those who were not receiving anticoagulants at the time of their thromboembolic complications. This further emphasizes the effects of anticoagulant therapy.

In figure 7 the rate of thromboembolic complications by week of illness is considered. The advantage in using anticoagulants is clearly demonstrated for each of the first four weeks of the illness. As is the case with deaths, the incidence of thromboembolic complications is highest in the second week, but is significant throughout the first four weeks. This, again, clearly indicates the importance of beginning anticoagulant therapy even as late as the second or third week following a myocardial infarction. Since it is impossible to predict from the condition of the patient during the first week whether thromboembolic complications will develop during subsequent weeks and whether the patient will die from them, it is important to give anticoagulants to all patients with coronary occlusion and myocardial infarction unless specific contraindications exist.

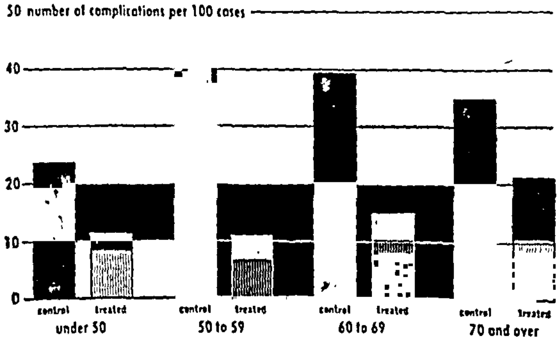

Fig. 6.—Number of thromboembolic complications by age groups. The hatched areas indicate the complications occurring during anticoagulant therapy, and the darkened areas indicate the complications occurring while the patient was not receiving anticoagulants.

Figure 8 indicates the types and locations of thromboembolic complications as they were encountered and the effects of anticoagulant therapy in each group. Under the classification of secondary myocardial infarctions, there was evidence of extension of the original thrombosis in 9 cases per hundred in the controls, as against 2 cases per hundred in treated patients. There was infarction of new areas in the myocardium in 6.5 cases per hundred in the controls, as against 2.5 among treated patients. Pulmonary emboli occurred in 9.4 cases per hundred among the controls, as against 5.2 cases among the treated subjects. Moreover, half of the so-called treated patients were not actually receiving anticoagulants at the time they suffered their pulmonary embolus. Cerebral emboli occurred in 3.4 per hundred of the control patients, as against 1.4 per hundred among the treated patients. Peripheral emboli developed in 3 per hundred of the control group, as

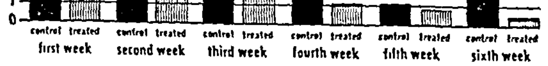

Fig. 7.—Number of thromboembolic complications by week of illness. The vertical column of figures shows the number of complications per hundred survivors from the previous week. The hatched areas indicate the complications occurring during anticoagulant therapy, and the darkened areas indicate the complications occurring while the patient was not receiving anticoagulants.

against 1 per hundred of the treated group, and venous thromboses occurred in 5 per hundred of the control patients as against less than 2 per hundred of the patients. Hence it will be seen that at every site and with every type of complication, those receiving anticoagulant treatment in addition to conventional treatment had a distinctly better chance of escaping thromboembolic complications than those who received the conventional forms of treatment only.

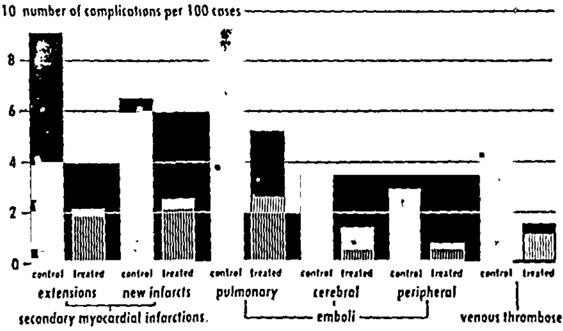

Fig. 8.—Types and locations of thromboembolic complications. The hatched areas indicate the complications occurring during anticoagulant therapy, and the darkened areas indicate the complications occurring while the patient was not receiving anticoagulants.

The hazard of hemorrhagic manifestations resulting from anticoagulant therapy has been carefull reviewed (fig. 9). It should be noted that hemorrhagic manifestations unrelated to anticoagulants numbered 6 per hundred in the control group. This is in comparison to a rate of slightly more than 12 per hundred cases among those patients who were classified as "odd day," or "treated," patients. It should be noted, however, that of these complications in the latter group, two in twelve developed in patients who were not receiving anticoagulants when their hemorrhages occurred. In an additional three in twelve complications the hemorrhages were known to be due to causes other than anticoagulant therapy and not aggravated by that treatment. The total hemorrhagic manifestations in the treated group which are known to have been due to causes other than anticoagulants approaches that observed in the control group. An additional seven complications per hundred cases, however, were believed to be due to, or aggravated by, anticoagulants. The incidence of

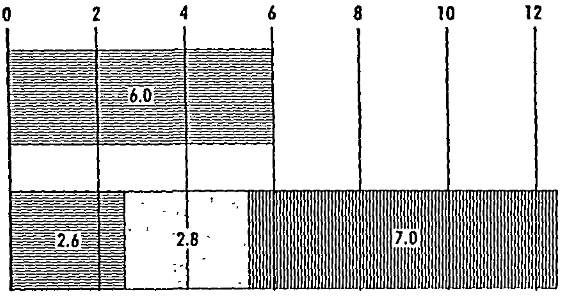

Fig. 9.—Relation of hemorrhagic manifestations to anticoagulants. The upper bar is of the control group and the lower bar of the treated group. The hemorrhagic manifestations were mild in 50 per cent of the cases. The horizontal line of figures at the top shows the number of hemorrhagic manifestations per hundred cases. The areas with vertical hatching indicate that the hemorrhagic manifestations were due to or aggravated by anticoagulant therapy; the dotted areas indicate occurrence while the patient was receiving anticoagulants but due to other causes, and the areas with horizontal hatching show occurrence when no anticoagulants were being given.

severe hemorrhages resulting from anticoagulant therapy was extremely low. Of the thirty hemorrhages clinically observed, fifteen, or 50 per cent, were mild in severity, fourteen, or 47 per cent, were moderately severe and only one (3 per cent) was severe. The postmortem observations on hemorrhagic phenomena are not yet ready for presentation, but those examined to the date of reporting presented no alarming picture of the hemorrhagic risks in anticoagulant therapy under proper controls. Blumgart and his co-workers,[10] working with dogs whose coronary arteries had been ligated, observed that animals treated with "dicumarol" (in some instances to the point where prothrombin times of 132 seconds resulted) showed no increase of hemorrhages in the myocardium, endocardium or pericardium as compared with animals that did not receive "dicumarol."

The sources of bleeding in relation to anticoagulants are demonstrated in figure 10. There is a definite incidence of hemorrhages among the control group in each of the categories except that for epistaxis. Hemorrhages due to causes other than anticoagulant therapy also occurred in three of the categories in the treated group. There will be noted that hemorrhages occurred more frequently in the treated group in all categories except that of hemoptysis. The explanation for the greater incidence of hemoptysis in control patients is that pulmonary infarction is much commoner among these patients than among the treated patients.

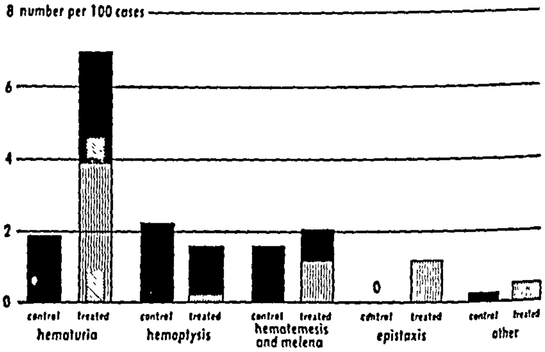

Fig. 10.—Sources of bleeding in hemorrhagic manifestations. Fifty per cent of the manifestations were mild. The areas of diagonal hatching indicate gross hemorrhage; the areas of vertical hatching indicate hemorrhagic manifestations due to or aggravated by anticoagulant therapy, and the darkened areas indicate hemorrhagic manifestations due to other causes.

The records of patients who received anticoagulant therapy and yet presented thromboembolic complications or died are being subjected to analysis in the central laboratory. It appears, on the basis of present experience, that a considerable proportion of the failures occurred because the prothrombin time was not adequately prolonged. While there is at present a question as to what constitutes the minimal effective therapeutic prothrombin time, it is our experience that a safe and effective therapeutic range is between 30 and 50 seconds, by Link-Shapiro modification of Quick's one stage method. This range, as interpreted in our laboratory, would approximate a prothrombin activity of between 20 and 10 per cent. For heparin, the clotting time should be approximately three times normal. Although statistical evidence as to the relative incidence of thromboembolic complications at various prothrombin times (i. e., at various levels of reduced prothrombin activity) is not yet available, a review of those cases in which thromboembolic complications occurred during the administration of "dicumarol" reveals that, of the

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[10] Blumgart, H. L.; [illegible] M.; Lewis, H. D., and Wessler, S.: The [illegible] Heart in Experimental Acute Coronary Occlus [illegible] 60: 228, 1947.

38 complications[11] occurring under these conditions, only 4 occurred in patients whose prothrombin time is known to have been maintained at 30 seconds or more for at least the three days before the complication appeared. Further analyses regarding this factor will be recorded in forthcoming publications. It is not sufficient to state that a patient has received coagulants. Key questions which must be answered are: how much, how long, what levels of effectiveness were obtained and how consistently were these maintained? With this information, it should usually be possible to determine whether a failure was caused by drug or was the responsibility of those administering it.

SUMMARY

This report summarizes the results obtained by a preliminary statistical analysis of the first 800 cases studied by the Committee for the Evaluation of Coagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction. In the analysis, the incidence of deaths and of both thromboembolic and hemorrhagic complications has been compared in a "control" series of patients treated by conventional methods alone and in a series of "treated" patients who received anticoagulants ("dicumarol," heparin, or both) in addition to conventional treatment. The composition of the two groups was observed to be essentially the same.

The rates of deaths and the number of thromboembolic complications per hundred cases have been calculated for the control and treated groups as a whole, by week of illness, by age of patient and by type and location of the specific thromboembolic complication. The percentage of cases in which one or more complications developed has also been analyzed. The results in every category studied indicate that the use of anticoagulants improves strikingly the outlook of the patient suffering a coronary occlusion with myocardial infarction. The incidence of hemorrhagic manifestations was also analyzed. It was observed that about six minor or moderate hemorrhagic manifestations per hundred cases occur in patients not receiving anticoagulants, but that this incidence is about six per hundred higher in patients receiving anticoagulants. However, only one serious hemorrhage was observed clinically in the entire 800 cases.

Although the minimum prolongation of the prothrombin time necessary to obtain a therapeutic effect from "dicumarol" in each patient has not been established, it is our experience that a range of from 30 to 50 seconds, as measured by the Link-Shapiro modification of the Quick one stage technic, produces a safe and an effective therapeutic level. This range of prothrombin times approximates a decrease in prothrombin activity to between 20 and 10 per cent, as determined in our laboratory. In using heparin we attempt to prolong the clotting time of whole blood to approximately three times the normal value by the Lee-White technic. In only 4 cases out of the entire series did thromboembolic complications occur when the prothrombin time had been maintained at a level of 30 seconds or more for at least three days prior to the occurrence of the complication.

CONCLUSIONS

1. On the basis of data compiled from 800 cases of coronary occlusion with myocardial infarction, it is concluded that patients treated with anticoagulants in addition to the conventional forms of treatment present a death rate and incidence of thromboembolic complications during the first six weeks period following an attack significantly lower than those experienced by patients treated solely by conventional methods.

2. Anticoagulant therapy should be used in all cases of coronary thrombosis with myocardial infarction unless a definite contraindication exists.

3. In the absence of hemorrhagic conditions the hazards from hemorrhage are not sufficient to contraindicate the use of anticoagulants in coronary occlusion, provided that there are facilities for adequate laboratory and clinical control.

ABSTRACT OF DISCUSSION

Dr. Bernard Drexler, Rochester, N. Y.: What is considered an adequate laboratory or other method of controlling the use of heparin in these cases? We know that the prothrombin time is a fairly decent method of control or knowing when the patient is getting enough "dicumarol," but how about the heparin?

Dr. Walter Vest, Huntington, W. Va.: Would Dr. Marple give a sample method of the use of the anticoagulants?

Dr. Charles D. Marple, New York: Regarding the laboratory control of heparin administration, satisfactory results are attained clinically if the clotting time is prolonged to between two and three times the normal. Determining clotting times by the Lee-White method, by which any time up to 10 minutes is normal, the clotting time should be maintained between 30 to 45 minutes with heparin. About the plan for administering "dicumarol," we emphasize that the stated values are obtained by the Link-Shapiro modification of the one stage method, with the use of a commercial thromboplastin obtained from rabbit lung. Normal values for whole plasma are from 15 to 17 seconds. When talking of prothrombin tests, the results must be so qualified, since, if one uses a different method, a variation in technic or a different thromboplastin, the prothrombin times obtained will differ, perhaps considerably. When a diagnosis of coronary occlusion with myocardial infarction is made, the anticogulant should be administered immediately. If the diagnosis is disproved later, treatment with the drug is discontinued. If the initial prothrombin time is normal, or below, the patient should be given 300 mg. of "dicumarol." On the second day and thereafter the dose of "dicumarol" is estimated according to the prothrombin time on the particular day. "Dicumarol" should never be administered until a test of prothrombin time has been done and results reported on that day. If the prothrombin time is less than 30 seconds, 200 mg. of "dicumarol" should be given each day until the time has reached 30 seconds. From 30 to 35 seconds, 50 to 100 mg. should be administered, and when the prothrombin time is above 35 seconds, "dicumarol" should not be given. If the prothrombin time does not exceed 50 or 60 seconds, nothing should be done; "dicumarol" should not be given until the prothrombin time falls again. When the prothrombin time approaches or reaches 30 seconds on the down grade, "dicumarol," 100 to 200 mg., should again be given if the time is below 30 seconds and 50 or 100 mg. if the time is between 30 and 35 seconds.

The patient's prothrombin time should be maintained between 30 and 50 seconds and "dicumarol" therapy continued for thirty days from the last thromboembolic complication. No 2 patients react alike, and a patient may react differently from day to day, particularly in the presence of congestive failure or hepatic or renal disease. If the prothrombin time exceeds 60 seconds, one should beware of hemorrhage. Vitamin K therapy is effective in the majority of cases in reducing the prothrombin time, and it is fairly effective in controlling hemorrhage, but it must be administered repeatedly in doses of 60 to 75 mg. intravenously every four hours.

In terms of percentage in our cases prothrombin times of 30 to 40 seconds represent a reduction of prothrombin activity to approximately 10 to 20 per cent of normal. We agree with Nelson Barker that one must reduce prothrombin activity to about 20 per cent of normal. If a different method is used, or a different thromboplastin, values in seconds will represent a somewhat different percentage than do values with our technic.

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[11] Complications for which the date is not accurately known and those occurring on days for which no prothrombin time is available are excluded from this total, but complications occurring in control cases during anticoagulant therapy are included.

CANCER OF THE LARYNX

Five Year End Results in a Series of Patients Treated Between 1930 and 1942

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JOHN V. BLADY, M.D.
CHARLES M. NORRIS, M.D.
and
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Philadelphia

Six hundred and twelve patients with cancer of the larynx were treated at the Temple University Hospital from 1930 to 1947 inclusive (table 1). Surgical treatment was used in 453 [illegible] or thyrotomy, a form of partial [illegible] and total laryngectomy in 244), and irradiation was used in 159 cases.

Five year end results can now be computed only on three hundred and seventy-one treatments given through December 1942. Of the 118 patients treated by laryngofissure, 102 were determinate. By determinate we mean that they did not die of other cause within five years of treatment and were traced. Prior to 1940 the laryngectomies done at the Temple University Hospital were done by others, and we include in the five year analysis only the 39 cases in which the operation was performed by us in the years 1940 to 1942 inclusive; of these, 35 were determinate. There was no operative mortality in this series. Of the 91 patients treated by irradiation, 83 were determinate.

Table 1.—*612 Cases of Carcinoma of the Larynx (1930-1947 Inc.)*

	Laryngofissure	Laryngectomy	Irradiation
1930	7	15	0
1931	5	10	1
1932	8	9	1
1933	14	5	4
1934	8	12	4
1935	8	12	8
1936	7	11	9
1937	14	12	9
1938	5	5	13
1939	12	22	7
1940	11	18	6
1941	12	11	10
1942	7	20	10
1943	14	17	11
1944	17	12	7
1945	15	17	13
1946	23	12	18
1947	22	24	10
Totals	209	244	159

In table 2 are shown the five year end results in the 206 determinate cases of cancer of the larynx without palpable nodes treated by us from 1930 to 1942 inclusive. Laryngofissure was done in 102 determinate cases, with a five year survival rate of 81 per cent. In the 35 determinate cases in which laryngectomy was done, a 66 per cent cure rate was obtained. The 69 patients without palpable nodes when first seen who were treated by irradiation showed a five year survival rate of 51 per cent. (Fourteen patients with palpable nodes were all treated by irradiation, but none survived five years; these cases are considered in computing the final five year survival rate.) The series in which treatment was by roentgen irradiation included both intrinsic and extrinsic cases. The five year survival rate of initial treatment among the 206 patients without palpable nodes treated surgically and by irradiation is 68 per cent.

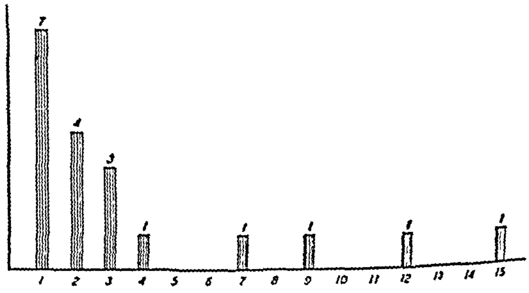
RECURRENCES

Table 2.—*Five Year End Results in the 206 Determinate (Intrinsic and Extrinsic) Cases with No Metastasis When First Seen, 1930-1942*

	Determinate Cases	Recurrence and/or Metastasis in 5 Years	N. E. D. 5 Years	Percentage 5 Year Cures
Laryngofissure	102	19	83	81
Laryngectomy (1940-1942 inclusive)	35	12	23	66
Irradiation	69	23	35	51
Total	206	54	141	68

The interval of recurrence in the 19 cases in which it developed following laryngofissure is shown in the chart. It is interesting to note that 14 of the 19 recurrences (74 per cent) developed in the first three years and that 4 of the remaining 5 developed after five years (1 each in the seventh, ninth, twelfth and fifteenth year respectively). This tends to show that three year cure rates are not entirely valueless, and furthermore that five year cure rates are certainly not final. Of course, late recurrences always raise the question of whether we are dealing with a recurrence of the old tumor or with a new primary growth. We do not believe it possible to set any time as the period after which a tumor arising in the same region as a previous one is to be considered a new tumor and not a recurrence. A study of the location and histologic character of the original tumor compared with the location and histologic character of the supposed recurrence might shed some light on this problem.

The methods and results of treatment of the recurrences after laryngofissure are shown in table 3. Three patients had second laryngofissures, but 1 of these later had a laryngectomy for a second recurrence, and has now been free of disease for five years. Of the 2 that had only second laryngofissures, both are free of disease, 1 for more than five years. Of 6 patients who had laryngectomies, 1 has been lost to follow-up, 1 is dead of disease and the remaining 4 are free of disease, 2 of them for more than five years. One patient had a laryngectomy, then roentgen irradiation, and, in addition, neck dissections with interstitial irradiation for bilateral cervical metastasis, but is now free of disease more than five years after the last treatment. Of the 7 determinate patients with recurrence after laryngofissure treated by irradiation, 4 are dead of disease and 3 are well, 2 for more than five years. Summarizing,



Recurrences (19 cases) in a series of 102 laryngofissures.

From the Departments of Laryngology and Roentgen and Radium Therapy, Temple University Hospital, Philadelphia.

Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 25, 1948.

of the 19 patients with recurrence after laryngofissure, 17 were determinate, and of these 17, 6 are dead of disease and 11 are well, 7 of them for more than five years after the last treatment. Subtracting the 4 patients still free of disease after treatment of recurrence but treated less than five years ago, we can consider 13 determinate, and the five year recurrence salvage rate 54 per cent (7 out of 13). Of course, some of the 4 patients treated less than five years ago will undoubtedly reach five years without further recurrence.

Recurrence or metastasis developed in 12 of the 35 determinate cases in which laryngectomy was done by us. Recurrence alone developed in 3 cases, metastasis without local recurrence in 8, and both recurrence and metastasis in 1. Only 1 patient in this group has survived more than five years. He was the patient already mentioned, who had been first treated by laryngofissure, then had local recurrence for which a total laryngectomy was done, and subsequently had bilateral cervical metastasis. He is now free of disease six years after treatment of the metastasis.

Table 3.—*Treatment of Recurrences Following Laryngofissure*

	Total Cases	Determinate Cases	D O D	N.E.D. 1-5 Years	N.E.D. Over 5 Years
2d LF *	2	2	0	1	1
2d LF and LG †	1	1	0	0	1
LG	6	5	1	2	2
LG, roentgen ray, ND ‡ and radon	1	1	0	0	1
Roentgen ray or radium	8	7	4	1	2
Untreated	1	1	1	0	0
Totals	19	17	6	4	7

Five year survival rate (7/13) = 54%

* LF = laryngofissure. † LG = laryngectomy. ‡ ND = neck dissection.

Table 4.—*Treatment of Recurrences After Irradiation*

	Determinate Cases	N.E.D. Over 5 Years
Second course of roentgen rays	17	5
Laryngectomy	3	2
Total cases treated	20	7

Five year survival rate (7/20) = 35%

In 23 of the 69 patients treated by irradiation recurrence developed, and of 17 of these who received a second course of irradiation, 5 are free of disease for more than five years (table 4). Laryngectomy was done in 3 patients, and 2 of these have been without disease for five years following operation. Three were not treated. Thus the salvage rate for treated recurrences after irradiation was 35 per cent (7 out of 20).

METASTASES

In this series no patient with cancer of the larynx having cervical metastases when first seen was treated by laryngofissure or laryngectomy. Of the 83 determinate patients treated by roentgen irradiation, however, 14 had metastases. Thirteen patients received roentgen radiation to the primary lesion and the metastases. There were no five year survivals in this group. One patient was treated by a radical neck dissection with implantation of radon, and remained well for four and one-half years, after which time a lesion in the lung developed which was thought to be a second primary. He died of generalized metastases fifty-nine months after treatment of the primary lesion and cervical metastases.

As shown in table 5, a total of 33 patients had metastases after receiving treatment to the primary lesion. Of this group, 29 patients received treatment for the metastases. Seven of these patients survived five years, giving a five year survival rate of 21 per cent. Only 1 patient of 13 treated by roentgen irradiation alone and 1 patient of 3 treated by roentgen and radon irradiation survived five years. Five of 9 patients treated by partial or radical neck dissection in combination with radon and/or roentgen irradiation survived five years. In this series, there were no patients treated by surgery alone.

Table 5.—*Treatment of Metastases Developing After Treatment of Primary Tumor*

	Total Cases	D O D*	D O C†	N.E.D. 5 Years
Roentgen ray	13	12	0	1
Roentgen ray and radon	3	2	0	1
Radon alone	4	4	0	0
Surgery, roentgen ray, radon	9	3	1	5
No treatment	4	4	0	0
Totals	33	25	1	7

Five year survival rate (7/33) = 21%

* D O D = dead of disease.
† D O C = dead of other causes without evidence of recurrence or metastasis.

Since 1940, the treatment of cervical metastases from cancer of the larynx at the Temple University Hospital has been as follows: For patients presenting metastases on admission, roentgen treatment is generally employed for treatment of the primary lesion in the larynx; if possible, the metastases are incorporated in the same portal. After the irradiation, either before severe radiation epithelitis develops or after it has completely healed, the metastases are surgically exposed and radon is implanted in a tissue dosage of 5,000 to 10,000 gamma roentgens, or a neck dissection with or without implantation of radon is performed. More recently, we have treated a number of patients by radical neck dissection followed by external radiation to the primary lesion. In a few cases laryngectomy combined with neck dissection has been done. The results in these cases, however, are not suitable for evaluation, because the treatment was given less than five years ago. For metastases occurring after the primary disease has been controlled, a radical neck dissection is performed, and radon is implanted when there is perinodal infiltration.

Table 6.—*Five Year End Results Including Recurrence Salvage in Cases Without Palpable Metastases When First Seen*

	Determinate Cases	N.E.D.* 5 Years Following Primary Treatment	Recurrence and/or Metastasis	N.E.D. 5 Year Following Further Treatment	Total N.E.D. 5 Year Survival Including Treatment of Recurrences and Metastases
Laryngofissure	102	83 (81%)	19	7	90 (88%)
Laryngectomy	31†	20 (65%)	11	0	20 (65%)
Roentgen ray	69	35 (51%)	23	9	44 (64%)
Total	202	138 (68%)	53	16	154 (76%)

* N.E.D. = 5 year survival rate (154/202) = 76%.
† Total cases treated by laryngectomy (1940-1942) minus 3 treated initially by laryngofissure and one treated initially by roentgen ray.

In table 6 are shown the final end results, including the ultimate five year salvage of recurrence in addition to the cure rate obtained by each respective method. It will be noted that the salvage of 7 of the patients in whom recurrence developed after laryngofissure raises the final survival rate of the group to 88 per cent. None of the 11 patients with recurrence after laryngectomy as a primary method of treatment survived five years, but the salvage of 9 of the recurrences and metastases after initial treatment by roentgen irradiation raises the final survival rate of that group to 64 per cent. The five year survival rate for cancer of the larynx without metastasis when first seen, in the 202 patients included in this series, therefore, is 76 per cent. Including the 14 patients who had metastasis when first seen who all were treated by roentgen irradiation and none of whom survived five years, the over-all five year survival rate among the 216 determinate patients with cancer of the larynx (intrinsic and extrinsic) treated by us from 1930 to 1942, inclusive, is 72 per cent.

SUMMARY AND CONCLUSIONS

Six hundred and twelve patients were treated at the Temple University Hospital in the years 1930 to 1947 inclusive. Four hundred and fifty-three partial or total laryngectomies were done, and 159 patients were treated initially by irradiation (table 1).

Three hundred and seventy-one operations or initial courses of treatment were given through December 1942 (one hundred and eighteen laryngofissures, one hundred and sixty-two laryngectomies and ninety-one initial courses of treatment by irradiation) and therefore are suitable for evaluation of five year end results. However, sixteen of the laryngofissures were indeterminate because of death from other cause within five years or failure of follow-up, leaving 102 (determinate) patients surviving more than five years. Of the one hundred and sixty-two laryngectomies, the one hundred and twenty-three done prior to 1940 were not done by us, and 4 of the patients on whom we performed laryngectomy died of other cause or were lost to follow-up, leaving thirty-five operations in determinate cases; only thirty-one of these should be counted, however, because 3 patients had been treated previously by laryngofissure and 1 by irradiation. Of the 91 patients treated initially by irradiation, 8 were indeterminate and 83 determinate. Adding these groups, 102 patients operated on by laryngofissure, 31 by laryngectomy and 83 treated by irradiation, we have 216 determinate patients treated by us from 1930 to 1942 inclusive, with a final survival rate of 72 per cent.

Analysis of the nineteen recurrences in one hundred and two laryngofissures showed that 74 per cent occurred in the first three years and that four (22 per cent) occurred after five years. It is suggested, therefore, that three year statistics have some value and that five year statistics are by no means final.

With regard to laryngofissure, the initial cure rate of 81 per cent and the salvage of 51 per cent of the recurrences following this procedure lead us to insist on its value and to protest against the current tendency to disparage it. However, we strongly urge that its use be severely restricted to suitable cases.

Recurrence after laryngectomy has, in this series, not been successfully treated, but recurrences after irradiation have been salvaged by second courses of irradiation and laryngectomy.

Continued post-treatment observation for at least five years, and preferably for life, is advised for all cases, and the prompt institution of intensive treatment, surgical or radiative, or a combination of the two, is necessary in case of recurrence or metastasis if salvage of failures of initial treatment is to be secured.

Criteria for the selection of treatment should be constantly studied and reevaluated in the light of end result analyses such as that presented in this paper, and technic of treatment should likewise be reevaluated and modified according to experience.

ABSTRACT OF DISCUSSION

Dr. Gordon B. New, Rochester, Minn.: Patients with cancer of the larynx as a rule have only one good chance to get well. While secondary operations and irradiation will sometimes salvage an additional group, the surgeon who determines what the original method of treatment is to be has an important decision to make and should have all the available information that will aid him in doing this. To give the patient the best possible chance, I feel that microscopic examination of a fresh frozen section is essential. This frequently aids in selecting a small group of patients which may be successfully taken care of under suspension laryngoscopy, the lesion being destroyed with surgical diathermy or by means of radium seeds. This fresh frozen section may also determine whether a conservative operation or a laryngectomy should be done. Four methods are used in the treatment of carcinoma of the larynx: 1. The removal or treatment of the local lesion under suspension laryngoscopy; 11 per cent of our patients are treated in this manner. 2. Thyrotomy may be used as an exploration to determine the treatment of choice, either a conservative operation or a laryngectomy. The surgical removal of the growth with cartilage and diathermy are used in 41.2 per cent of our cases. 3. Laryngectomy alone or associated with dissections of nodes is used in 47.8 per cent of our cases. 4. Irradiation for the inoperative cases is used in 21.5 per cent of our cases. The size, the location and the extent of the growth, the grade of the malignancy, the presence or absence of extralaryngeal extensions of the disease or metastasis to the cervical nodes, the age of the patient and his general condition all must be considered. We use suspension laryngoscopy, and after a careful examination with "pentothal sodium," oxygen and curare, a biopsy is made, and with this method we are able to take care of a percentage of our cases. We feel that the fresh frozen section diagnosis must be employed in order to give the patient the best possible treatment. The operative mortality in the treatment of carcinoma of the larynx has been reduced considerably in the last few years with improvement of technic and the use of penicillin. From 1939 to 1945, 217 laryngectomies, 173 thyrotomies and 38 laryngeal suspensions and removal of the carcinoma were done at the clinic, making a total of 428 patients with only 2 deaths—both of coronary thrombosis—an operative mortality of 0.47 per cent.

Dr. Paul Holinger, Chicago: The overwhelming rich mass of statistics which Dr. Jackson has presented leads us to feel that we must digest them before beginning a discussion. I should like to ask two questions in regard to some of the points raised. Would it be possible to include in this study the grade of the tumors in relation to the various modalities of therapy used, and finally in relation to the end results? Dr. New mentioned this in his discussion, but I repeat it because of the second question that comes to mind. The second question is the relation of the age of the patient to the incidence of recurrence. This is possibly in part at least dependent on the grade of malignancy encountered in each case of recurrence. Thus the problems of the grade of the tumor, the age of the patient and the incidence of recurrence might show a definite relationship. I should like to take this opportunity to compliment Drs. Jackson, Blady, Norris and Maloney, not only for presenting this gold mine of statistics, but also in the excellence of the results which they have achieved in the treatment of cancer of the larynx. We all look forward to the opportunity of studying the tables after they are printed.

Dr. Gabriel Tucker, Philadelphia: The authors have presented a large series of cases, and I wish to compliment them on their excellent results on which their accurate and beautifully presented statistics are based. In my own consecutive series of 680 cases of cancer of the larynx I have recently reviewed a group of cases observed between 1933 and 1943, with a follow-up for five year end results to 1948. This series included

331 cases. In the ten year period there were 117 laryngofissures and 75 laryngectomies. The results in the laryngofissure group have been tabulated and are as follows: Five patients died of primary cancer of the lung without recurrence in the larynx. Three patients died of cardiovascular disease, 1 of acute nephritis, 1 of an old bronchiectasis (a postoperative pulmonary complication). In all, 10 patients died in the five year period from other causes without recurrence of cancer in the larynx. In 6 cases, follow-up was unobtainable. This reduced the number to 101 that may be used to estimate the percentage of five year freedom from cancer. Fourteen of this group had recurrence and metastasis and died of cancer with involvement of the larynx. Deaths from cancer in the five year period were 14 out of 117; deaths from other causes 16; five year cure by thyrotomy, 86 per cent. It is the responsibility of the surgeon who operates on laryngeal cancer to do everything possible to see that adequate follow-up observation is carried out. It is not only a matter of follow-up for recurrent carcinoma, but other conditions may arise in the larynx. Dr. McReynolds of Galveston, Texas, told me of a patient on whom I did a laryngofissure for squamous cell carcinoma of the larynx fifteen years ago. The patient consulted Dr. McReynolds because of increasing hoarseness and on examination a mass was found on the larynx, which on removal was histologically found to be a fibroma.

Dr. Murdock Equen, Atlanta, Ga.: Dr. Jackson's presentation has afforded us much food for thought and, as usual, he is to be congratulated on his excellent results. When a patient presents himself with cancer of the larynx, the operator must determine, according to his experience, what operation will afford that particular patient the best chance for recovery, varying from the partial removal of a vocal cord to total laryngectomy with radical dissection of the nodes of the neck. However, we feel that in the presence of an extensive intralaryngeal growth, a total laryngectomy plus intensive roentgen therapy has given us the best results. It might be well to consider rehabilitation of these patients as far as the voice is concerned. We recently presented before the University of Alabama postgraduate seminar a woman who, five years ago, had had a total laryngectomy, and she spoke distinctly with an esophageal voice over a microphone and was heard clearly throughout the large assembly hall. The difficulty in obtaining artificial larynges during the war made both the doctor and the patient realize what an excellent esophageal voice may be obtained by patients after many hours of tedious practice.

Dr. Chevalier L. Jackson, Philadelphia: I am sorry that Dr. Martin got lost out in Iowa and missed connections. He sent a courteous telegram of apology. I am most grateful to Dr. New for his discussion and also to Dr. Holinger, Dr. Tucker and Dr. Equen. There are a few comments that I should like to make, but I will be extremely brief, because I have asked the chairman to allow our collaborator, Dr. John Blady, to make the final statement of the discussion. Dr. New and Dr. Holinger have both mentioned grading. I should like to say that we take grading into consideration in the borderline cases in making the decision between the various methods of treatment. The grading, we think, is one of the less important factors, in our experience, but certainly not to be ignored. Dr. Blady can give you some figures about the evaluation of grading. I was interested in Dr. Tucker's 5 cases of carcinoma of the bronchus. We have had several in which it was difficult to tell whether the bronchial lesion was a primary tumor or a metastasis, because we have had some in which we were sure of metastasis.

Dr. John V. Blady, Philadelphia: When we deal with cancer, I believe that we should not confine ourselves to one particular modality of treatment when several modalities are available. Cancer requires radical treatment regardless of whether it is by irradiation or by any method of surgery. In our clinic we feel that the methods are secondary to the primary consideration of the treatment that will give the patient the best prognosis. In our consideration of treatment, for example, laryngectomy has definite criteria, and so does laryngofissure. Dr. Jackson has indicated the type of cases suitable for laryngofissure; however, the decision on the selection between laryngofissure and irradiation, and laryngectomy and irradiation, is not always quite so easy. Dr. Holinger asked about grading. In our opinion grading is an important criterion which helps in the selection of one or the other modality of treatment. Some time ago we analyzed the relationship of grades of tumor and results. We found that in grade 1 and grade 2 cancer, for example, the five year survival statistics of all three methods (that is, laryngofissure, laryngectomy and roentgen irradiation) were equally good, but grade 3 type of tumor, we found, behaved entirely differently. For laryngectomy, for example, the end results for grade 3 cancer were 44 per cent five year survivals in a group of 27 cases. On the other hand, in the cases that we thought suitable for irradiation and which were so treated, the five year results were only 27 per cent. Grade 4 tumors are definitely radiosensitive and radiocurable. One more thing deserves to be stressed. Treatment by irradiation has been relegated as treatment for inoperable cancer and only considered when the surgeon was of the opinion that he could not remove all of the tumor. I feel operability of the tumor is not the criterion for irradiation. Treatment by irradiation when properly used in the selected cases may not only save the patient's voice and spare him untold anguish but may also save his life. In our efforts to continue to improve our methods of treatment and thereby save more lives, we should continue to study criteria which may eventually give us the best procedure for each case of cancer.

CARCINOMA OF THE BREAST

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As a cause of death, cancer of the breast is registered in increasing numbers. The rise in incidence is a real one and not due to better methods of diagnosis or to more accurate certification. This increase, nevertheless, is due chiefly to the changes in the age structure of the population, that is to an increase in the number of persons living at ages of 50 to 75 years. As a more speculative reason, it can be said that cancer of the breast is on the increase when the birth rate is falling and when lactation does not take place. Smaller families, failure of lactation and longevity contribute their share in the increase of the disease. In England and Wales, it heads the list of incidence as the site of cancer in women and accounts for over 20 per cent of the total deaths due to cancer in women. This increase in mortality and in incidence suggests the need for an unbiased review of the present day methods of treatment and a critical analysis of the causes of failure to reduce the mortality rate. Such an analysis must be based on the natural history of the disease and should correlate this with the various methods of treatment.

In comparison with all other sites of cancer, with the exception of cancer of the skin, the breast is the most favorable site, that is, the least rapidly lethal site. The expectation of life in untreated patients has been computed from time to time in many countries. The mean duration is 39.3 months; it is therefore essential that one should not rely on three year survival rates as a yardstick to measure the efficacy of any given form of treatment. To appreciate the achievement of accomplishment of treatment, Prof. Major Greenwood investigated the expectation of life of a woman 55 years of age, under various conditions. On actuarial estimation, the normal expectation of life is 18.77 years (age at death, 74 years); with untreated cancer of the breast it is reduced to 3.8 years (age at death, 59 years). What happens if treatment is

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given? If the treatment is given under average conditions, the expectation of life is 5.78 years (age at death, 61 years); if treatment is given under best conditions, 12.93 years of life can be expected (age at death, 68 years). Even under the best conditions, there is a loss of 5 years of life on the average. How does the best condition differ from the average? It differs firstly in the condition of the patient when first applying for treatment and secondly in the actual methods of treatment.

CONDITION OF THE PATIENT

The state of the patient can be assessed from many angles: (1) age, (2) clinical type of tumor, (3) histologic variety of tumor, (4) duration of symptoms, (5) physiologic state of the breast and (6) extent of the disease.

Age.—Except for carcinoma of the breast in the very young (under 25 years of age), there is no definite evidence that the disease is more lethal in the third or fourth decade than in more advanced years of life. There is some evidence that in the very old (over 75 years of age) the disease does not materially shorten life.

Clinical Types.—The clinical types are well known and fall into one of the following types: (1) scirrhous, (2) encephaloid, (3) duct carcinoma, (4) atrophic scirrhous and (5) Paget's disease of the nipple. Of these the most malignant is the common scirrhous type and the least malignant, the atrophic scirrhous type. The encephaloid or soft variety, although it grows more rapidly and breaks down, is less lethal, as the incidence of skeletal metastasis is less frequent and longer delayed. The duct carcinoma and Paget's disease of the nipple are of moderate degree of malignancy.

Histologic Varieties.—Microscopic varieties are many. The following six cover the commonest types: (1) papillary carcinoma, (2) intraduct carcinoma, (3) adenocarcinoma, (4) scirrhous carcinoma, (5) medullary carcinoma and (6) mucoid carcinoma. The prognostic significance of these various types is as follows: the most malignant are the scrirrhous and the medullary and the least malignant the papillary and the intraduct types. The in between group is that of adenocarcinoma and of mucoid carcinoma. The most malignant give rise to metastasis earlier in the stage of the disease, and also more frequently.

Duration of Symptoms.—When a sufficiently large number of patients are available for study, it becomes clear that the actual length of history or duration of the disease does not by itself imply a poor prognosis. Thus very short histories of three weeks, or less, are not infrequently associated with obvious spread to the axillary lymph nodes, and, conversely, eight to twelve months' history may show the tumor, although bulky, to be still localized in the breast. Duration by itself is of less importance than rate of growth; a slow rate is as a rule associated with long histories and indicates a low grade of malignancy; the converse is also true.

Physiologic State of the Breast.—It is generally recognized that pregnancy and lactation are factors which seriously affect prognosis. Rate of growth of mammary cancer during pregnancy and lactation is rapid, and termination of pregnancy leads to temporary regression. The most virulent type of all, the acute cancer, is seen during lactation. The virulence of the disease is evidenced by the early and widespread lymph node invasion.

STAGE OF THE DISEASE

To assess the immediate and ultimate prognosis, to estimate the probable expectation of life and above all to find out the value of any given method of treatment, clinical staging is of paramount importance. Many classifications have been suggested. The best known and the most valuable is that of U. V. Portmann. It is a clinical classification and has the merit that it can be applied by the clinician on examination of the patient, without accessory aids. I have selected Portmann's classification as the most likely to throw light on the efficacy of various methods of treatment. In a simplified form and with minor modifications, it is as follows:

Stage I.	Tumor of the breast only
Stage II.	Tumor of the breast and cutaneous changes and/or axillary glands
Stage III.	Tumor of the breast and supraclavicular glands or contralateral axillary glands or fixation to pectoral fascia
Stage IV.	Skeletal or visceral metastasis

Of all factors affecting prognosis, stage of the disease is the most important; size, site, length of history, rate of growth, histologic variety or clinical type have some prognostic value, but the key to the assessment is clinical staging.

Attention must be drawn to the following points:

1. Stages I and II are anatomically within the area covered by radical mastectomy; stage III is beyond surgical excision and stage IV only suitable for palliative measures.

2. Cutaneous involvement can be one of three types: (*a*) direct spread of the tumor to the skin, with or without fungation; it is the least malignant; (*b*) the diffuse invasion with edema, the pigskin, or *peau d'orange,* type; it is of grave prognosis (*c*) the invasion of the skin by multiple discrete nodules is the most grave as regards chances of recovery.

3. Prognosis in stage I and II cases, depends on the presence or absence of palpable axillary nodes. It is, of course, agreed that sometimes clinically nonpalpable nodes show histologic invasion and, conversely, palpable nodes may occasionally show inflammatory changes only; but in most cases the presence or absence of palpable and clinically malignant axillary nodes is the best guide to the future of the patient.

CHOICE OF METHOD OF TREATMENT

The methods used are radical mastectomy, radiation (radium or roentgen rays) and a combination of both. The stage of the disease guides the selection of the method.

In stage I the method of choice is radical mastectomy. It is not contended that radiation alone cannot achieve total regression of the tumor for five to eight years; but at present it does not do so as certainly, as regularly and as frequently as radical mastectomy. Nearly 90 per cent of five year survivals and 65 per cent of ten year survivals have been obtained by radical surgical treatment in stage I cases. It remains the method of choice. A considerable number of patients treated solely by radium has shown equally good results, but in some cases the condition recurred locally after eight years and in others it remained quiescent but they were not free from disease.

In patients with stage II lesions the results from surgical treatment show a great drop; no longer 90 per cent but only 30 per cent of five year survivals are achieved. Here radiation as the sole method of treatment is nearly as good (or as poor) as surgical treatment, but the combined method results in a definite improvement.

In stage III cases, radiation alone has given better results than surgical treatment and is the method of choice.

Surgical Treatment.—Radical mastectomy is considered the method of choice. The operative mortality rate is low, 1.65 per cent in 11,014 mastectomies done in twenty-two hospitals in London and the main university cities in England and Wales. Morbidity is slight, and most women have a full range of movement at the shoulder joint. Radical mastectomy remains the greatest achievement of surgery in the treatment of cancer of the breast.

Simple mastectomy is suitable in aged persons for the removal of a fungating mass, in bad surgical risks and in cases in which radiation is not considered suitable. The value of simple mastectomy is limited; it does not touch the axillary contents, and if disease is present there, there it remains.

Radical mastectomy is unsuitable in patients with edema of the skin, discrete cutaneous nodules and large fixed or extensive lymph nodes. In such cases, incalculable harm has followed radical mastectomy. The condition in such cases should be recognized as inoperable and the patient not submitted to operation. Patients live longer and in far greater comfort without surgical treatment, which is really not surgical intervention, but interference. It is considered important to stress the point that surgical treatment in unsuitable cases is a grave error of judgment.

Radiotherapy.—Radiotherapy is applicable as the sole method of treatment or in association with surgical treatment; in the latter it can be given as preoperative treatment, as postoperative treatment or both before and after operation. The indication for each will be considered.

Radiotherapy as the Sole Method of Treatment.—Radiotherapy is the method of choice without question in the treatment in cases of stage III lesions. Surgical treatment in this group has proved a failure, that is, the percentage of five year survivals after surgical treatment is negligible. On the other hand, the achievement of radiation is not only better, but considerable. The cases can be subdivided into two groups: (1) those cases in which complete regression of the disease is achieved, in which on clinical examination there is no evidence of active cancer. These patients are in a minority; they are the most radiosensitive group, and the question arises: when such total regression is achieved, should radical mastectomy be performed? There is as yet no definite answer to this question, but my impression at present is that it is justifiable to be content with radiation only and to await developments. If there is recurrence of local disease, surgical treatment should be considered, especially if further radiotherapy is handicapped by cutaneous changes due to previous radiation. Such cases are seen five to eight years after adequate radium therapy. (2) Cases in which regression but not total disappearance of the lesion is achieved by radiotherapy. In this group, many patients remain well for periods of five years and more. They still have a tumor of the breast, perhaps harder and smaller than before treatment, with palpable axillary or cervical nodes, but the disease is quiescent, does not cause much inconvenience and does not affect the general health of the patient. This palliation is a great achievement, if not the greatest of radiotherapy; careful follow-up of patients in this group shows without doubt the value of this method.

PREOPERATIVE AND POSTOPERATIVE RADIOTHERAPY

It is important to define precisely what is meant, what is aimed at and what is achieved by these two different uses of radiation.

Preoperative Radiotherapy.—Preoperative radiotherapy aims at sterilization of an active neoplasm in the breast, of the skin over it and of the immediate regional lymph nodes, in the axilla and below the clavicle. Careful histologic studies of breasts amputated at various periods after irradiation have been made and show obvious effects familiar in other sites, such as the uterus, the skin and the tongue. These changes vary from complete fibrosis to various degrees of degeneration of cancer cells—formation of fusion giant cells, abnormal mitosis, hyaline degeneration or calcification. Statistical evaluation of this method—preoperative radiation followed by radical mastectomy—is forthcoming from several centers in England and in Scandinavian countries. At Westminster Hospital, in 448 cases analyzed between 1930 and 1942, the five year survival rate with preoperative radiation was greater than with postoperative treatment, namely, 73 per cent in the former and 53 per cent in the latter (Dr. Stoll, Westminster Hospital, 1947).

Postoperative Radiotherapy.—Postoperative radiotherapy deals, and can only deal, with extension of the disease, actual or potential, beyond the anatomic area covered by the radical mastectomy, namely, the supraclavicular and anterior mediastinal or retrosternal lymph nodes and the skin flaps lifted at the operation. Unless the lesion is inoperable—and it is my contention that, if so, it must not be operated on—postoperative radiation deals with potential disease and is of speculative value. An analysis of my own series of cases and those at Westminster Hospital shows that in stage I cases no improvement of five or more years' survival has been achieved by postoperative radiation as compared with radical amputation as the sole method of treatment. It is reiterated that this applies only to stage I cases, stage I clinically and subsequently proved to be so by an absence of metastasis on histologic examination of all axillary lymph nodes. Postoperative treatment is of value in stage II cases, in which axillary lymph nodes although operable are shown to contain metastasis. In such cases, postoperative radiation improves the prognosis. In stage II cases, the ten year survival rate is thereby raised from 25 per cent by surgical treatment alone to 32 per cent by surgical treatment and postoperative radiation.

The value of postoperative radiation in stage III cases is less than that of radiotherapy as the sole method. Here ten year survival is obtained in 7 per cent only by surgical treatment and nearly double that —13 per cent—by radiation, whereas a combination gives only 9 per cent, showing that surgical treatment in stage III, alone or with radiation, is a worse method of treatment than radiation alone.

STATISTICAL EVALUATION OF RESULTS

The total number of patients with cancer of the breast treated in the period 1925-1948 is 915. The cases are subdivided in the following groups:

Primary cases with surgical treatment alone	381
Primary cases, treatment with radium alone	144
Primary cases, surgical treatment and radium	233
Recurrent cases, treatment with radium	157
Total	915

Of the 915 patients, 594 were treated more than five to fifteen years prior to the time of writing and lend themselves to statistical analysis. There were in fact, 632 such patients, but 38 could not be traced and were omitted. Of these, 348 patients could be followed up to fifteen years or more, and these are shown in table 1.

Table 2 shows the survival rates by stage of the disease, according to the method of treatment.

Table 1.—*Cancer of the Breast, 348 Cases*

Stage	Total Number	Percentage of Surviving Patients, Free from Disease		
		5 Years	10 Years	15 Years
I	97	87	65	36
II	138	29	25	12
III	95	20	15	7
IV	18	0	0	0

Table 2.—*Cancer of the Breast, 1932-1938; 263 Cases: Five and Ten Year Survival*

Stage	Percentage of Patients Surviving After Surgical Treatment		Percentage of Patients Surviving After Treatment with Radium		Percentage of Patients Surviving After Surgical and Radium Therapy	
	5 Years	10 Years	5 Years	10 Years	5 Years	10 Years
I	67	65	70	60	78	63
II	29	25	25	21	35	32
III	9	7	15	13	10	9

SUMMARY

The choice of method of treatment depends chiefly on the clinical stage of the disease. Radiotherapy is of value: (1) as the sole method of treatment in cases of stage III disease, and here the end results following radiotherapy are better than those following surgical treatment; (2) as a preoperative measure in cases of stage I disease, when improved results can confidently be expected, and (3) as a postoperative measure in cases of stage II disease and for recurrences. Radical mastectomy remains the best method of treatment in cases of stage I disease.

ABSTRACT OF DISCUSSION

Dr. U. V. Portmann, Cleveland: That cancer of the breast is increasing in England and Wales is interesting, and the explanations seem logical. I know of no published evidence that the incidence is increasing in this country. I have noted a proportionately higher percentage of benign tumors of the breast and early stage I and II cancers during the past fifteen years than previously. It may be that women and possibly physicians have been educated to discover breast tumors earlier and seek treatment more promptly. I agree that young women have just as good a chance of survival as the elderly, provided that the extent of involvement is similar in both age groups. Also I agree that scirrhous carcinoma is the most malignant type. Scirrhous carcinomas grow relatively slowly and insidiously, invade extensively when still rather small and are most radioresistant. Also, I agree that pregnancy and lactation seriously affect prognosis. This may be explained by the supposition that there are physiologic factors necessary for development and growth of the fetus which also stimulate growth of cancer. The presence or absence of involvement of axillary nodes is of considerable prognostic significance. About 85 per cent of women without axillary involvement (stage I) survive five years after radical mastectomy alone. But there are 15 per cent who die of cancer before that. In the latter group, neoplastic cells may have passed through the axilla to supraclavicular nodes or extension may have taken place elsewhere as, for example, to the internal mammaries or parasternal nodes where they are undetectable. In such circumstances radiotherapy could be of little benefit. Axillary involvement seldom was detected in patients, in whom the disease was ultimately classified as stage II involving few nodes. Of such patients 40 per cent undergoing operation alone and 60 per cent of those having postoperative radiotherapy survived five years. Fifty per cent of our series with primary cancer of the breast, up to 1939, had clinical and pathologic "criteria of incurability," with or without evidences of remote metastases when first examined (stages III and IV). Of those without remote metastases (stage III), 15 per cent given radiotherapy alone, and only 4 per cent of those operated on, survived five years.

Dr. Robert J. Reeves, Durham, N. C.: I believe that we in this country agree with Sir Stanford's ideas. It is not known why one carcinoma of the breast may be purely osteomyelitic, whereas, another may be purely proliferative, similar to the type of cancer in the prostate. There is little difference in stage I cures throughout the world. I am happy to see a universal agreement in regard to the stage of the disease and the criteria of curability. Dr. Portmann's criteria of curability is something which we in the South are trying to get all of our radiologists and surgeons to agree on, because there are still some surgeons who believe that some patients are incurable; however, they may be operable. But the point of this classification is that we do not believe that irradiation can make an incurable condition curable. I am occasionally requested to use radiation for incurable patients, to make them operable. This usually does more harm than good. Sir Stanford's classification of the pathologic and clinical appearance of cancer cannot be stressed too much among radiologists, as one must know the basic pathologic condition and the clinical classification and appearance of the lesion before one employs irradiation and gives a prognosis. The location of the tumor in the breast is also important, because of the lymphatic drainage. One must know the lymphatic drainage of the breast in order to give adequate irradiation. It is also agreed that in the stage I disease operation alone is the method of choice. In the clinic with which I am associated, at the surgeon's request, we give postoperative radiation, more as a matter of insurance. We cannot always be certain about the extent of the lesion. However, we believe that the percentage of cures has increased, whereas in stage II, radiation alone is certainly never advocated; it is either given preoperatively or postoperatively, combined with surgical treatment. I hope that radiologists can agree on therapy some day, as the surgeons have agreed on the type of operation. Unfortunately, there is still some difference of opinion as to the type of irradiation, whether it be preoperative or postoperative, and also the points irradiated.

Dr. Henry J. Ullmann, Santa Barbara, Calif.: May not one interpret the 15 per cent (that Dr. Portmann spoke about) of failures in stage I to be those cases in which generalized metastasis has already occurred? If one removes the primary lesion before it has spread, one cures the patient. If one does not, the patient may have extensive recurrences or may have metastasis years later. I would like to ask Sir Stanford whether it is not possible to bring on artificial menopause by irradiation in persons below the menopause age, and cannot radiologists convince many surgeons that it is useless to give postoperative radiation for insurance in stage I cases? Should not postoperative radiation be used only in stage II cases for the recurrences, that is, when preoperative radiation has not been done? When at operation the surgeon finds nodes in the axilla that are not palpable, that is, the pathologic stage II—not clinical—should he or should he not immediately refer the patient for postoperative irradiation? Should one save postoperative irradiation for the possibility of recurrences? I should like Sir Stanford's opinion on that.

Dr. Robert R. Newell, San Francisco: Doctors who take the trouble to codify their diagnosis and treatment and to collect their statistics and present them to us perform a priceless service, particularly in cancer. In deciding what treatment to use for one's patients, one may classify them by any scheme that fits one's therapeutic convictions. But classification has also to serve in comparing the results of different methods of treatment in the hands of different doctors. For this purpose, classifications should be uniform. For some doctors Sir Stanford's stage II would spread over into stage III, because they would attempt a surgical cure only if skin were not involved in the cancer. Also, I am uncertain whether his stage I is the same for his patients treated surgically as for those treated with radium, because in the former one has microscopic check on the axillary nodes but for the latter only palpation, with its well known errors in missed glandular metastases and in enlarged benign nodes miscalled cancerous (about 30 per cent).

Dr. Constance A. P. Wood, London, England: Sir Stanford Cade said that he had noticed that it was in those patients who gave a long history of symptoms before coming for treatment that he often obtained the best end clinical result. I think this is true not only in cancer of the breast but also in cancer of the cervix. In a survey made in London of approximately 1,000 cases of cancer of the cervix, it was shown that the highest five year survival rate occurred in that group of patients giving the longest clinical history of symptoms. I believe that this is explained by the fact that in the more slowly growing types of tumor and, hence, those giving the longest clinical histories, though their initial response to radiation is slower, the final end result obtained is better than in the more rapidly growing anaplastic types. The anaplastic so-called radiosensitive type of growth with a short clinical history may show a good initial response to radiation but a low final cure rate. Thus, there is no correlation between radiosensitivity and radiocurability. The more rapidly growing types of tumor are the ones which give the worst results both to radiation and to surgical treatment.

Sir Stanford Cade, London, England: Dr. Portmann asked what evidence we had that preoperative treatment does affect the prognosis. We have not been doing this preoperative treatment systematically for as long as postoperative radiation, and there has been little opportunity so far to compare the two series of five year results statistically. In stages II and III results were improved by about 20 per cent in the five year survival rate. We were encouraged and guided in adopting preoperative radiation by the results obtained at the Radiumhemmet in Stockholm. If Professor Berven is in the room, perhaps he will confirm this, as I believe that there they have improved the survival rate from 7 or 9 per cent to 30 per cent by giving preoperative as well as postoperative radiation. I entirely agree with Dr. Portmann about the question of submitting doubtful cases to surgical treatment. I should like to stress the point that, accepting his criteria of incurability, one should not submit inoperable cases to surgical treatment. In the clear way that he put it, "These are the criteria of noncurability." In that important group I wish to stress the value of roentgen rays as a palliative treatment. Many women with incurable cancer—perhaps as many as 25 per cent—are given an added five year survival by roentgen therapy. They live with their tumor, which has been rendered more or less innocuous by radiation. We have found no value in postoperative radiation in stage I cases, and the survival rate in early cases is not improved by postoperative treatment. Dr. Newell's criticism is valid. As regards my definition of stage I, I know that my classification is not the best, but I have been inclined to accept it for the sake of simplicity. In stage II, I have included in one group those with axillary nodes and those with metastasis. I have done it because these cases are still within the anatomic area of a radical mastectomy. I realize that the various types of skin and glandular spread are of different prognostic significance; nevertheless I group them together on anatomic grounds. Then I break them down into subgroups, some suitable for surgical treatment, others for radiotherapy. I thank Dr. Constance Wood for drawing attention to the fact that the length of history has nothing to do with the stage of the disease. A patient with a history of two years, or eighteen months, can still be in stage I, and this indicates that we are dealing with a different type of cancer of lesser virulence or rate of growth.

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d-TUBOCURARINE IN WAX AND OIL

For Control of Muscle Spasm in Tetanus

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In the treatment of tetanus, the primary aims are neutralization of the toxin and control of tetanic muscle spasms. Whereas a therapeutically sound regimen for administration of antitoxin has been formulated,[1] control of the convulsions and muscle spasm has remained unsatisfactory. The purpose of this paper is to report the effect of a new preparation, d-tubocurarine in wax and oil,[2] on the convulsions and muscle spasm in this disease. Each cubic centimeter of this preparation contains 175 mg. of d-tubocurarine in 4.8 per cent wax in peanut oil. Our results with this material in 3 consecutive patients with tetanus who lived have been sufficiently good to warrant more extended observation.

REPORT OF CASES

Case 1.—R. Z. (fig. 1), an 11 year old white school boy, was admitted to the Detroit Receiving Hospital June 11, 1947, complaining of frontal headache and cramping pains in the left leg and back, of twenty-four hours' duration, and of difficulty in opening his mouth, of six hours' duration. Twelve days before admission, while wading, he had punctured the plantar surface of his left foot with a nail. About five days later swelling and redness were noted about the wound site, and in the next few days purulent material exuded from the lesion. The patient had not received tetanus toxoid previously and did not receive antitoxin at the time of the injury.

Physical Examination.—Physical examination revealed an acutely ill boy who screamed in pain as repeated violent convulsive spasms racked his body into opisthotonus. His flushed face was wet with sweat. The temperature was 102 F., pulse rate 104, respirations 22 and blood pressure 120 systolic and 70 diastolic. His neck and back were stiff. Spasm of his jaw muscles prevented separation of his teeth for examination of the mouth and throat. The abdominal muscles were moderately tense. There was pronounced spasm of the left leg with plantar flexion of the foot. A small well healed scar was present over the midplantar surface of the left foot. Slightest stimulation of the left leg resulted in generalized tetanic convulsions. The results of the remainder of the physical examination were not remarkable.

Course.—The patient was immediately placed in a quiet darkened room and was given 60,000 international units of tetanus antitoxin intravenously and 40,000 units intramuscularly. During the next three days he was given an additional 100,000 units of antitoxin intramuscularly. Curare ("intocostrin") was administered in 100 unit doses intramuscularly at approximately four hour intervals during his first two hospital days. Relaxation of the spastic muscle groups occurred within twenty minutes and lasted about one hour. The patient complained of

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[1] Firor, W. M.: The Treatment and Prevention of Tetanus, Internat. Abstr. Surg. 75: 185-190 (Aug.) 1942.

[2] The drug was supplied through the courtesy of E. R. Squibb & Sons, New York.

diplopia, salivation and dysphagia following administration of the curare. On June 13 a supply of d-tubocurarine in wax and oil was obtained, and the patient was given 0.5 cc. of this preparation intramuscularly without effect. On the following day the dose was increased to 0.75 cc. Moderate relaxation of jaw and back muscles was noted in about an hour. At two hours relaxation was greater, with considerable decrease in the number and severity of tetanic spasms. The effect seemed to wear off in about twenty hours. From June 14 to June 22 with the exception of June 20, when it was omitted with return of spasm and tetanic contractions, the patient was given 0.75 cc. daily. On June 22 there was an exacerbation of tetanic contractions with severe spasm of back and leg muscle groups. The dosage of d-tubocurarine in wax and oil was increased to 1.25 cc., with relief of symptoms in about two hours. This dose was given daily until June 26, when our supply of the drug was exhausted. None of the toxic symptoms noted with aqueous curare were observed. In addition, the patient was given penicillin 30,000 units every three hours as a prophylactic against pneumonia. Paraldehyde, 8 cc. in oil, was given by rectum every eight hours for sedation. Later chloral hydrate, 4 cc. every four hours, by mouth, was substituted, because he could not retain the paraldehyde. When the d-tubocurarine in wax and oil was exhausted, tribromoethanol solution ("avertin," with amylene hydrate [solution]), 3 cc. in 150 cc. of water, was administered rectally at night for seven days.

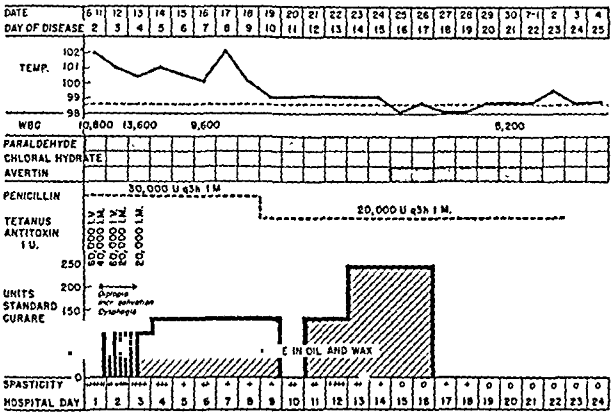

Fig. 1.—Chart of data in case 1.

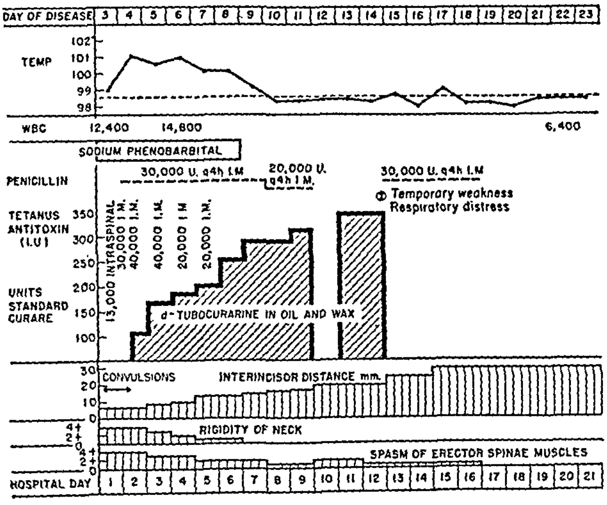

Fig. 2.—Chart of data in case 2.

On June 18, seven days after the initial dose of antitoxin, a macular erythematous rash developed, which responded promptly to 50 mg. of diphenhydramine hydrochloride ("benadryl hydrochloride"), administered three times daily by mouth. On July 12, because of residual plantar flexion of the left foot, a short leg walking cast was applied. This was removed July 18, and the patient was discharged two days later, on his fortieth hospital day. One month later he was well and had resumed all his previous activities.

Comment.—This represents a case of severe local and generalized tetanus. Treatment with d-tubocurarine in wax and oil was employed over a fourteen day period without manifestation of toxicity. There was no evidence of cumulative effect. Relief of spasm was gratifying, but the dosage employed initially was too small to achieve the maximum benefit possible without toxicity. We believe that the infected focus of infection should have been debrided in spite of its innocuous appearance and that intrathecal antitoxin should have been administered under ether anesthesia at the time of débridement in the operating room.

Case 2.—R. W. (fig. 2), a 45 year old Negro carpenter, was admitted to the Detroit Receiving Hospital Sept. 28, 1947, because of stiffness of the jaws of two days' duration and attacks of cramping pain in the middle part of the abdomen, back and extremities of one day's duration. Three weeks before admission he smashed the distal phalanx of his left ring finger with a hammer.

Physical Examination.—Physical examination revealed an acutely ill man with risus sardonicus and opisthotonus, crying out with pain. The temperature was 98.8 F., pulse rate 80, respirations 20 and blood pressure 160 systolic and 90 diastolic. Maximum measurement of interincisor distance was 7 mm. His neck was stiff and his back was arched so that a fist could be passed under it with ease. There was pronounced spasm of the abdominal muscles and of the extremities, and touching them produced painful spasms. The terminal phalanx of the left ring finger revealed a loose finger nail with crusted granulations at its edges. The results of examination otherwise were not remarkable.

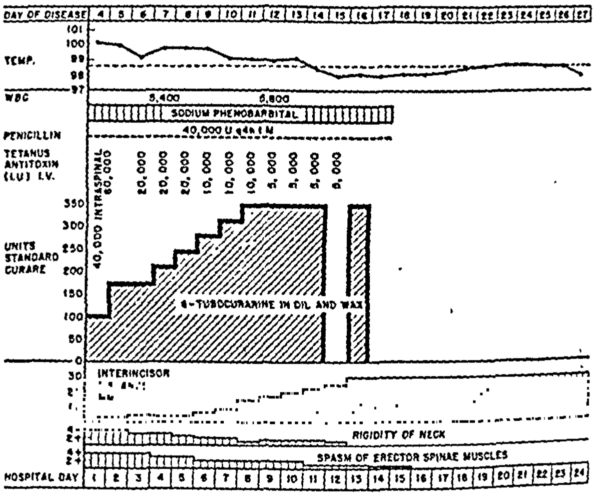

Fig. 3.—Chart of data in case 3.

Course.—The patient was given 3,000 units of antitoxin intrathecally and 30,000 units intramuscularly at once, and the wound was debrided. An additional 120,000 units of antitoxin was given during the next four days. Sedation with phenobarbital sodium, 0.16 Gm. intramuscularly every six hours, was ineffectual in controlling convulsions or spasm. Twenty hours after admission, treatment with d-tubocurarine in wax and oil was begun with a dose of 0.6 cc. (105 mg. d-tubocurarine). Slight relaxation was noted in about two hours, but tetanic spasms continued. The daily dosage was increased by increments of 40 to 60 mg. of d-tubocurarine) until 2 cc. of the preparation (350 mg. d-tubocurarine) was given daily. With a dosage of 1.2 cc. the patient was free of spasms and was able to eat and move about. Spasticity tended to increase somewhat after eighteen to twenty-four hours, but convulsions did not recur. Further increase in dosage was continued to secure maximal relaxation and to determine when toxic symptoms might appear. On the eleventh day of therapy, thirteen hours after intramuscular injection of 2 cc. of the preparation, the patient slipped off a bedpan. In trying to get back into a comfortable position he experienced difficulty in breathing, cyanosis, increased salivation with tracheal obstruction, dysphagia, generalized weakness and tachycardia, but no diplopia. Considerable mucus was aspirated with an intratracheal catheter; he was given oxygen intranasally and in forty-five minutes was apparently no worse for the experience. Treatment with d-tubocurarine in wax and oil was discontinued, with return of moderate, but not troublesome, stiffness of the legs and back the next day. Ten days later, on his twenty-first hospital day, the patient was discharged.

Comment.—This represents a case of generalized tetanus in which treatment for eleven days with d-tubocurarine in wax and oil resulted in gratifying relief of tetanic spasms when the dosage was 1.2 cc. daily. The dosage was increased to secure more adequate muscle relaxation and to determine at what level toxicity might appear. On the second day of a 2 cc. dosage, the patient slipped off a bedpan and experienced severe respiratory difficulty. It was postulated that this reaction was due to inadvertent massage of the injection site with release of a toxic amount of d-tubocurarine rather than to a cumulative effect, because the symptoms subsided rapidly and previously we had observed a decrease in curare effect in this patient eighteen to twenty-four hours after injection. For sedation, we believe that paraldehyde, chloral or ether in oil by rectum are preferable to the phenobarbital sodium given in this case.

Case 3.—R. W. (fig. 3), a 62 year old white unemployed man, was admitted to the Detroit Receiving Hospital Nov. 7, 1947, because of stiffness of the extremities and back of three days' duration and "locking" of his jaws of six hours' duration. One week before admission he had scraped the base of his left thumb on a cement block. For eight years he had had a varicose ulcer over the external malleolus of the left ankle, for which a saphenous ligation had been done at another hospital two months before the present admission.

Physical Examination.—Physical examination revealed an acutely ill elderly man with stiff neck, rigid back and extremities and moderate spasm of the abdominal muscles. His mouth could not be pried open to remove his false teeth. Maximum interincisor distance was 3 mm. There were no convulsions. The temperature was 100 F., pulse rate 80, respirations 20 and blood pressure 156 systolic and 90 diastolic. There was moderate retinal and peripheral arteriosclerosis. At the base of the left thumb was a healing abrasion, which did not appear infected. Over the external malleolus of the left ankle was a varicose ulcer covered with a thin dirty gray exudate, from which gram-positive spore-bearing bacilli and gram-positive cocci were obtained on smear. Results of physical examination otherwise were not remarkable.

Course.—The patient was given 40,000 international units of antitoxin intrathecally and 60,000 units intravenously, and his wounds were debrided. An additional 110,000 units of antitoxin was administered during the next eleven days. The patient was given 0.6 cc. of d-tubocurarine in wax and oil intramuscularly, with some subjective relief of symptoms in about two hours. The dosage was increased by increments of 0.2 cc. until the amount administered was 2 cc. daily. There was progressive decrease in muscle spasm and increase in the interincisor distance. When the medication was discontinued for one day, however, there was no notable increase in measurable muscle spasm. Two additional doses were given in an attempt to produce electrocardiographic changes. None occurred. The patient was discharged on his thirty-third hospital day.

Comment.—This represents a case of tetanus of moderate severity. The patient was given 3,570 mg. of d-tubocurarine over a period of fourteen days, with relief of painful muscle spasm. For six days he received 2 cc. of the wax-oil mixture (350 mg. d-tubocurarine) daily without toxicity and with no evidence of cumulative effect.

COMMENT

For control of the convulsions and muscle spasm in tetanus many drugs have been employed with only limited success. The disadvantage of sedatives and anesthetics is that, if given in amounts adequate to control convulsions, they interfere with the nutrition and vegetative functions of the patient. Furthermore, some which depress respiration, notably the barbiturates and tribromoethanol solution, have been shown to shorten the life of experimental animals with tetanus.[3]

Treatment with curare, which acts primarily at the motor end plate, avoids these disadvantages. Its desirable relaxant effect permits the patient with tetanus to eat, move, void and defecate, but in our previous experience the aqueous preparation (intocostrin ®)[3a] proved of limited value because of its short action (fifteen minutes to an hour) and its frequent unpleasant side reactions: diplopia, dysphagia, hypersecretion, laryngeal paralysis, respiratory paralysis and occasional drops in blood pressure to shock levels. Administration of aqueous curare by constant intravenous drip as described by West[4] presents almost insurmountable technical difficulties in tetanus patients.

d-Tubocurarine in wax and oil, however, seems to produce a prolonged relaxant effect without many of the unpleasant side reactions of curare. Schlesinger[5] has given 1,500 injections of this preparation in amounts ranging from 0.4 to 2.5 cc. to 200 patients with various spastic conditions. Duration of action in his series varied from twenty-four to one hundred and sixty-eight hours, with longer action in the cases of less severe disease. Duration of action and dosage, in the absence of a method for measuring curare blood levels, must be judged by clinical observation. In our 3 patients with tetanus, the duration of action following doses of 0.6 to 2.0 cc. ranged between eighteen and twenty-four hours or more, but no cumulative effect was noted. The relaxant effect was apparent within one to three hours after injection. The daily maintenance dosage varied between 1.25 cc. for a 38 Kg. boy and 2.0 cc. for an 80 Kg. man. When maintenance doses were reached, the patients were able to eat, move about and defecate and were not stimulated into spasm by examination. On the basis of our experience, we believe it safe to give an initial intramuscular dose calculated on the basis of 3.5 to 4.0 mg. of d-tubocurarine per kilogram of body weight, but not to exceed 2.5 cc. of the preparation. Subsequent dosage must be gaged by clinical response. The objective is to control convulsions and relax spasm without producing muscle paralysis.

Toxic effects were observed in only 1 of our patients (case 2). He experienced difficulty in breathing, increased salivation and cyanosis when he slipped off the bedpan. He was completely relieved by tracheal aspiration and oxygen within an hour. It was thought that he had inadvertently massaged the site of injection, with release of a toxic amount of curare. Because Pearlstein and Weinglass[6] reported that curare has a cardiotoxic effect which precludes its use "for long periods as would be necessary in treatment of tetanus," we made frequent studies of the circulation in our patients. Electrocardiograms taken before, during and after treatment showed no significant changes. The systolic blood pressures fell between 10 and 20 mm.

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[3] Firor, W. M.; Lamont, A., and Schumacker, H. B., Jr.: Studies on the Cause of Death in Tetanus, Am. J. Surg. **111**: 246-274 (Feb.) 1940.

[3a] Weed, M. R.: Unpublished data.

[4] West, R.: Intravenous Curarine in the Treatment of Tetanus, Lancet **1**: 12-16 (Jan. 4) 1936.

[5] Schlesinger, E. B.: (*a*) The Use of Suspensions of Tubocurarine in Oil in Treatment of Spasticity, Arch. Neurol. & Psychiat. **55**: 530-534 (May) 1946; (*b*) Recent Advances in the Use of Curare in Clinical Practice, Bull. New York Acad. Med. **22**: 520-529 (Oct.) 1946.

[6] Pearlstein, M. A., and Weinglass, A.: Fatal Effects of Prolonged Curarization, Am. J. Dis. Child. **67**: 360-364 (May) 1944.

of mercury, but there was no notable change in the pulse rate and no arrhythmias developed. These patients received total doses of d-tubocurarine ranging from 2,485 mg. in eleven days to 3,570 mg. in fourteen days.

Although we encountered no serious toxic reactions, we believe that the same precautions should be observed in treatment with d-tubocurarine in wax and oil as with aqueous curare. This preparation should not be given to myasthenic patients or to patients with renal disease. In addition, the suspension must be shaken vigorously before it is withdrawn from the vial to insure uniform distribution of the d-tubocurarine, the syringe and needle must be kept perfectly dry, and massage of the site of injection must be avoided. Until further experience with this preparation is attained, the patient with tetanus must be watched constantly. Cumulative action may occur, and a laryngoscope, endotracheal tube, aspiration apparatus, neostigmine and oxygen for nasal administration must be available for immediate use.

SUMMARY

Three cases of tetanus in which d-tubocurarine in wax and oil was used for control of convulsions and muscle spasms are reported. In optimum dosage, this preparation produced relief of tetanic muscle spasms without serious side reactions. The duration of action was eighteen to twenty-four hours or more, but in dosages employed no cumulative effect was noted. All of the patients lived. From this experience it is concluded that d-tubocurarine in wax and oil is an effective agent for controlling tetanic muscle spasms and is not unduly dangerous. Precautions in using this preparation are noted.

Clinical Notes, Suggestions and New Instruments

TREATMENT OF RECTAL AND RECTOSIGMOID POLYPS

Funnel Tip Suction as an Aid in Their Removal

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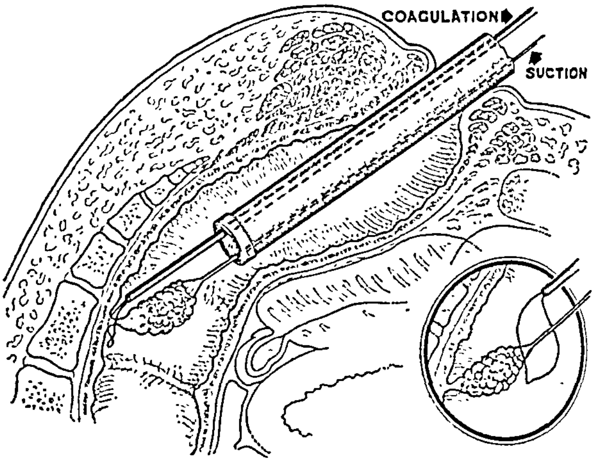
New York

The removal of polyps of the upper part of the rectum and rectosigmoid presents technical difficulties of some magnitude if performed through a proctoscope. The proper and complete removal of such a lesion through the anal outlet may give accurate data for proper diagnosis and prognosis and information as to the need for further operation. Piecemeal removal of such lesions should be avoided, because the gross appearance of the polyp, together with sections through the base or pedicle, is most important in determining the proper treatment of the patient.

These lesions can be removed by several technics. David[1] advocated section of the sphincter in the posterior commissure with prolapse of the mucous membrane with the polyp and local excision. Others have approached the lesion through the ischiorectal space with local excision and without sphincter section. Removal through a proctoscope with an electric snare provides a simpler form of treatment for the majority of lesions. The current should be of the coagulating type and of low intensity, so that a slow thorough coagulation of the base will be accomplished. The development of radio tube machines with settings for known depth of coagulation makes such a current available.

The major technical difficulty is in engaging the polyp through the loop snare to secure the pedicle well away from the base of the polyp and in normal tissue. As an aid in controlling the prolapse of the polyp through the loop, a modification of the usual suction tube has been devised. A small funnel tip replaces the standard distal end and side openings. The instrument also has finger tip control of suction through an opening in the tube at the proximal end. This allows control of suction by the operator. This instrument is introduced into the proctoscope after the coagulating snare is placed near the polyp. The funnel suction tip is introduced through the wire snare and engages the polyp (insert at lower right hand corner of the figure). This gives strong but gentle and bloodless traction. The pedicle can then be put on the stretch and the wire loop pulled down on the pedicle at a safe distance from the base (figure). The coagulating current is now applied, and the wire snare is slowly tightened, with removal of the polyp. It must be emphasized that this instrument is useful only to prolapse the polyp through the snare and insure removal through normal tissue. Strong traction of a lesion above the peritoneal reflection is dangerous and may lead to a perforation of the sigmoid.



Drawing illustrating the technic described. Insert: The funnel suction tip is introduced through the wire snare and engages the polyp.

The funnel suction has been helpful in establishing the fixation and mobility of questionable lesions. When the tumor is engaged in the funnel one can determine whether there is a broad firm fixed base or a freely mobile polyp with a pedicle. Patients in whom polyps above the peritoneal reflection have been removed are hospitalized for from three to five days. No anesthesia is necessary.

The following suggestions will lead to fewer technical difficulties in this procedure:

1. The inverted position on a standard rectal table or the prone position with hips elevated and shoulders and legs depressed should be used wherever possible.

2. A large diameter proctoscope should be used; a 1-inch (2.5 cm.) proctoscope is preferable to a ⅞ inch (2.2 cm.) instrument.

3. The suction funnel must have a lumen of sufficient diameter to permit good suction and to allow passage of small pieces of tissue which may break away from the polyp, thus plugging the tube and preventing suction.

4. It is essential to have adequate assistance to hold the proctoscope in position and to hand to, and take from, the operator the various instruments which are being used.

5. Adequate and reliable suction equipment must be used with the suction funnel.

The funnel tip suction can be made in any hospital engine room. The following specifications have given the most practical instrument: (1) copper tubing with 3 mm. inside and 5 mm. outside diameter, (2) length 44 cm. and (3) funnel tip 1 cm. in diameter.

SUMMARY

A suction funnel for grasping and manipulating rectal and rectosigmoid polyps is described. Its use will facilitate the complete and safe removal of high rectal and rectosigmoid polyps through the proctoscope.

From the Surgical Service, St. Luke's Hospital, New York.

[1] David, V. C.: The Management of Polyp Occurring in Rectum and Colon, Surgery **14**:387-394 (Sept.) 1943.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following article. Howard A. Carter, *Secretary.*

THE PHYSIOLOGIC EFFECTS OF HEAT

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Before the physiologic effects of heat are discussed it would be instructive to consider the factors constituting the physiologic background for the regulation and maintenance of body temperature. This will afford a scientific basis for the dynamic stability of body temperature and indicate the modus operandi of the various factors taking part in regulation of temperature and in production of the physiologic effects.

NORMAL RANGE OF BODY TEMPERATURE

The temperature of the human body, in health, remains remarkably constant under conditions of extremely varying heat production and heat loss. The normal range of body temperature as determined by a thermometer placed in the mouth is between 96.7 and 99 F. The average is about 98.6 F. (37 C.). The rectal temperature is about 1 F. higher (97.2 to 99.5 F.) and the axillary about 1 F. lower than the oral temperature. Rectal temperature is the highest and most reliable. The temperature taken in the axilla or the groin is inaccurate, especially in thin subjects. Oral temperature is liable to variations from local conditions; for example, it is lowered by evaporation of sweat or contact with cold air. Hot drinks may raise the oral temperature. Activity of the muscles of mastication with the consequent increase of blood flow through them raises the oral temperature. This liability to variation makes oral temperature less reliable than rectal. The temperature of internal organs is about 2 or 3 F. higher than the temperature of the skin.

Diurnal Variations.—Variations in the body temperature occur in the same person throughout the day. The temperature of the average person is lowest about 4 a. m. and highest between 4 and 7 p. m. This normal variation is due to the degree of muscular activity which occurs during the day. A reversal of the ordinary daily routine, as in night workers, reverses the temperature curve. During sleep the temperature falls because of bodily inactivity and diminished control of the temperature-regulating mechanism, which shows itself in vasodilatation of cutaneous vessels. This is the reason why one chills easily during sleep. During severe exercise the temperature may rise to 39 or 40 C. (102.2 or 104 F.). This rise is proportional to the exertion and is due to the heat liberated by the active muscles. It is not accompanied by any ill effects or feeling of discomfort. It helps to increase the breathing and the pulse rate and facilitates the dissociation of oxyhemoglobin in the tissues. The body temperature may fall to 36 or 36.5 C. (96.8 or 97.7 F.) in the early stages of prolonged exposure to extremely cold weather. People shiver reflexly during such exposures and produce sufficient energy to maintain a body temperature within normal range.

The body temperature has been known to fall to 24 C. (75.2 F.) and to rise to more than 45 C. (113 F.) without fatal effects; these are probably the limits compatible with subsequent recovery.

Age Variations.—The temperature in infants is irregular at first, but periodicity gradually sets in with the development of regular periods of activity and rest. Heat regulation in very early life is imperfect. A fit of screaming causes a rise; a cold bath may lower the temperature by 7 F.

In persons of advanced age the temperature is usually subnormal. The body is less active, the circulation is feeble and there is less power of accommodation for changes in external temperature. Persons of this group tend to suffer in extremes of temperature.

THE REGULATION OF BODY TEMPERATURE

The temperature of warm-blooded animals remains practically unchanged, though the surrounding temperature varies between 0 F. or below and 100 F. or above. Mammals and birds possess efficient mechanisms for maintaining a constant body temperature against extreme changes in environmental temperatures. They are called homothermic animals. On the other hand, the body temperature of cold-blooded animals, such as the frog and turtle, is practically that of the environment. These are called poikilothermic animals.

The body temperature of man represents the balance struck by the heat produced by the tissues plus heat obtained from warmed food and the heat dissipated into the environment. Temperature regulation is effected by balancing heat production against heat loss. Heat production is the result of chemical reactions; heat loss is dependent on physical factors; they are therefore designated respectively as chemical and physical regulations of the body temperature.

Avenues of Heat Loss.—Heat is lost from the body by several ways:

1. Radiation, Convection and Conduction: The loss of heat by these means varies (*a*) with the environmental temperature; (*b*) in man, with the nature and amount of clothing, and (*c*) with the metabolic activity and the quantity of heat produced within the body.

The cooling of warm objects varies with the temperature of the air and neighboring objects. Warm objects lose heat rapidly through radiation, conduction and convection into the surrounding cooler environment. The rate of heat loss gradually decreases as the temperature of the object approaches that of the surroundings. Certain factors operate to encourage or minimize heat loss in the living body, depending on whether the environmental temperature is high or low: (*a*) Redistribution of blood is an important factor. The superficial blood vessels in the subcutaneous tissues and skin dilate or constrict and through the diversion of blood from the visceral regions to the surface of the body or from the surface to the internal organs, heat loss is correspondingly facilitated or hindered. (*b*) Alterations of blood volume[1] also play a role. A rise of body temperature leads to augmentation of blood volume. Two factors are concerned in the increase of the blood volume which follows a rise of environmental temperature: (1) contraction of the spleen, whereby whole blood is discharged into the general circulation;

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[1] Barcroft, J.; Meakins, J. C.; Davies, H. W.; Scott, J. M. D., and Fetter, W. J.: Phil. Tr. Roy. Soc., London, s.B **211**: 455, 1922.

(2) dilution of the blood, by water drawn from the tissues to augment the circulating fluid. The fluid drawn into the circulation is mainly from the skin, muscles and liver. At low temperature, for example, during exposure to cold, the blood volume is reduced and the blood becomes more concentrated, as shown by an increase in the percentage of blood solids. It is not altogether clear by what means this movement of water is brought about. However, there is evidence[2] of a nervous element (vasomotor nerves) in the mechanism. It has been demonstrated that after section of the spinal cord in the lower cervical region concentration of the blood does not occur when the animal is placed in a cold bath; the body temperature falls. However, if a normal animal is exposed to cold, the blood becomes concentrated and the body temperature does not change. Cold applied locally after section of the splanchnic nerves causes anhydremia as a result of the transudation of water into the skin of the cooled region. The migration of water is attributed to constriction of the cutaneous arterioles and consequent slowing of the capillary blood flow, which, in turn, apparently through oxygen lack, increases the permeability of the capillary wall. It is probable, therefore, that exposure to cold induces blood concentration through both central and direct peripheral effects. These changes of blood volume are of paramount importance in the regulation of body temperature. (*c*) Increased cardiac output is a third factor. Environmental temperatures above 30 C. (86 F.) produce moderate increase in minute cardiac output (5 to 30 per cent increase).

The rate of conduction of heat through the subcutaneous tissues to the skin varies considerably in different persons owing to the presence of varying quantities of fat. Fat serves to insulate the body from heat loss. Obese persons, therefore, become more easily overheated when, as in muscular exercise, heat production is increased; for the same reason they are better able to resist low temperatures.

Radiation, convection and conduction are influenced by the humidity of the atmosphere as well as by its temperature. Water vapor is less dense than dry air, and warm air than cool air. A layer of warm air saturated with moisture covers the surface of the clothed body. Convection currents are, therefore, set up between it and the surrounding atmosphere when this is cool and has a low water vapor content. When the surrounding air is nearly saturated with moisture (high relative humidity), as on close summer days or in a room crowded with people, loss by convection is reduced to a minimum. Wind also serves to remove the warm layer of air next to the skin and replace it with cooler air, thus increasing heat loss. Humid air is more opaque to radiant energy than dry air. A high water content of the atmosphere, therefore, also reduces heat loss by radiation. Dry air at a temperature much above body temperature may not cause a rise in the latter because the heat lost through evaporation may equal that gained by radiation and conduction, as well as that produced by metabolism. High environmental temperature will increase total metabolism by causing an actual rise of the temperature of the tissues and a greater velocity of their chemical reactions.

2. The Role of Evaporation in Temperature Regulation: The amount of heat lost from the body by radiation, conduction and convection is lowest whenever the temperature of the environment is close to that of the body. In fact, heat loss by these avenues ceases when the environmental temperature approaches 99 F. If the environmental temperature rises above body temperature, in the absence of other means of cooling, the body is bound to gain heat. When, under such circumstances, radiation, conduction and convection are no longer adequate to prevent increase of body temperature, vaporization becomes the important means for heat loss through the skin. Vaporization is the avenue for the entire heat loss of a naked man lying quietly in an environment at 34.5 C (94.1 F.) and covered with sweat.

To change water from the liquid to the gaseous state (vaporization) involves the loss of heat from the surrounding material, including the water itself. This heat is called the heat of vaporization. Evaporation is a cooling process. The heat absorbed in the vaporization of 1 cc. of sweat amounts to 0.58 calory.

There is a certain small amount of water in man which is lost in amounts of about 30 to 50 cc. per hour from the respiratory membranes and skin because they are moist; this is known as insensible water loss, to distinguish it from sensible perspiration (sweat). Persons born without sweat glands vaporize the same amount of water as normal persons[3] under basal conditions. In the absence of activity of the sweat glands the surface of the avascular epidermis is moistened by extravascular fluid originating from the capillary loops of the dermal papillae. Even at ordinary room temperature when no perspiration is obvious, heat loss through evaporation from the skin and lungs amounts to about 25 per cent of the total heat loss. When the environmental temperature rises, or heat production in the body increases, the respiratory rate increases, and the heat lost through warming the inhaled air is thereby augmented.

The relative humidity of the air, that is, the degree to which the atmosphere is already saturated with moisture, has an inverse influence on the rate of evaporation of water. Sweat which simply drips from the skin without evaporating does not increase heat loss. This is the basis for the crippling of heat elimination by sweat when the relative humidity is high. It is common experience that one feels hotter and suffers more discomfort in a hot and humid atmosphere than in one that is hot and dry.

The following are additional minor avenues for heat loss:

3. The Warming of Inspired Air to Body Temperature: The amount of heat lost in this manner depends on the temperature of inhaled air. At the usual room temperature it amounts to only about 3 per cent of the total heat loss.

4. Liberation of Carbon Dioxide from Solution in the Blood into the Gaseous State in the Lungs: This process involves the absorption of heat, but it contributes only about 4 per cent of the total heat loss.

5. The Heat Lost in the Excreta (Urine and Feces): This amounts to only about 1 to 2 per cent of the total.

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[2] Barbour, H. G.: Physiol. Rev. **1**: 295, 1921; Am. J. Physiol. **67**: 366, 1924. Barbour, H. G., and Tolstoi, E.: ibid. **67**: 378, 1924. Barbour, H. G., and Hamilton, W. F.: ibid. **73**: 315 and 665, 1925.

[3] Loewy, A., and Wechselmann, W.: Virchows Arch. f. path. Anat. **206**: 79, 1911.

Temperature Regulation by Altering Heat Production.—The production of heat goes on continuously in all tissues in order to supply the resting energy requirements. Heat production occurs mainly in skeletal muscles where exothermic chemical reactions, oxidative and nonoxidative, are continuously going on. The heart contributes some heat. All mechanical energy liberated by cardiac muscle is converted within the body into heat. The liver and kidneys, wherein numerous chemical reactions are performed, also are good sources of body heat. Tonic contractions of muscles even at rest add to the basal heat in the body. When more heat is required, the muscles become tense owing to an increase in tone. In answer to the question whether an increase in the tone of the skeletal musculature, below the stage of shivering, plays a part in chemical regulation of body temperature, Burton and Bronk[4] obtained objective evidence of the occurrence of a true "thermal muscular tone" by studying the action currents of muscle. This increase of tone began with the first sign of rise in metabolic rate. Shivering appeared later on when coordinated intermittent firing of motor units occurred. One of the most potent conditions that bring about an increase of heat production is a low environmental temperature. On exposure to a cold environment the metabolism rises. This is effected through the increase of tone of the skeletal musculature and the involuntary contractions in the form of shivering and chattering of the teeth. Paralysis of the skeletal muscles by curare leads to inability to maintain a normal body temperature in a cold environment. However, because the physical mechanisms of control remain intact, high environmental temperature can be resisted. Transverse section of the spinal cord at the level of the sixth cervical segment abolishes both the chemical and the physical regulation, at least until lower centers take over and a few of the mechanisms, especially physical, recover partially. Pilomotor muscles contract, causing "goose flesh," which is a vestige in man of the mechanism causing the ruffling of the hair or feathers in other mammals and birds to entrap a thicker layer of air.

The specific dynamic action of foodstuffs, especially proteins, sets free a certain amount of heat in the body. Protein food is an important factor in the chemical regulation of body temperature. In cold climates the per capita consumption of protein food is much greater than in the tropics. In winter one is more inclined to eat foods with high specific dynamic action than in the summer. At high environmental temperatures the physical mechanisms which hasten heat loss are counteracted by the specific dynamic action of food. This is why a low protein diet is more suitable for hot weather.

The Relative Importance of Chemical and Physical Means of Temperature Regulation.—When the environmental temperature is close to that of the body, both physical and chemical regulation of body temperature are least active. As the environmental temperature falls, physical regulation alone will suffice to maintain body temperature at first, but with greater reduction of environmental temperature chemical regulation will also become active. Du Bois[5] reported that the basal metabolism of a naked man in a calorimeter is surprisingly level in an environmental temperature between 22.7 and 34.5 C. (72.9 and 94.1 F.). This suggests that by adjusting heat loss alone man has an effective means of maintaining a constant temperature over an environmental range of 23 to 35 C. (73.4 to 95 F.).

Nerve Centers Regulating Temperature.—The reactions that take part in the maintenance of thermal equilibrium are under control of the central nervous system. Both the somatic motor and the visceral motor neurons take part in this control. The somatic motor fibers produce panting by activating the respiratory muscles, and shivering by activating the muscles of the trunk and extremities. The visceral motor neurons of the autonomic nervous system activate the erector pili muscles of the hair follicles and the sweat glands, and control the caliber of the cutaneous blood vessels. Sympathectomy eliminates passage of sympathetic impulses to cutaneous vessels, erector pili muscles and sweat glands and renders the animal extremely susceptible to cold.

The Role of the Hypothalamus.—The hypothalamus integrates the reactions responsible for thermal equilibrium. Through its influence on the somatic and visceral motor neurons, the hypothalamus functions as a physiologic thermostat and changes the rate of heat production and heat loss according to the thermal status and requirements of the body. Experimental evidence[6] indicates that the anterior portion of the hypothalamus is responsible for the prevention of hyperthermia when the body is exposed to warm environment. This is performed through panting, sweating and cutaneous vasodilatation, which increase heat loss and prevent overheating of the body. The application of cold to the hypothalamus causes a rise, and heating it a fall in the temperature of the body. Barbour[2] showed that application of cold to the hypothalamus caused vasoconstriction in the rabbit's ear. Stimulation of the hypothalamus caused sweating. In the normal state the heat-regulating centers are influenced (*a*) by the temperature of the blood flowing through them and (*b*) reflexly from the skin. The production of bilateral lesions in the anterior portion of the lateral hypothalamic area leads to fatal hyperthermia because of failure of the heat-dissipating mechanisms. Lesions of the posterior portion of the hypothalamus will, furthermore, lead to inability to maintain a body temperature within normal range on exposure to a cold environment. Such observations led to the conclusion that in the normal state the anterior portion of the hypothalamus is responsible for protection against a hot environment and the posterior portion is responsible for protection against a cold environment.

It is possible that the endocrine glands, specifically the thyroid and adrenal glands, play some role in the thermoregulatory mechanisms. The body temperature tends to be subnormal after experimental adrenalectomy or thyroidectomy. Also, in Addison's disease and in cretinism body temperature is subnormal. Serum taken from animals exposed to severe cold causes a rise of metabolic rate when administered to other animals. Exposure to cold increases the rate of the denervated heart. Prolonged exposure to cold produces hyperplasia of the thyroid gland and increased activity of the adrenals. The hormones liberated by the thyroid and adrenals participate in the catabolic processes which produce extra heat during exposure to cold. Hartman and Hartman [7] and Cannon and his associates [8] reported evidence of the influence of the adrenals on metabolism in response to cold through the increase in output of epinephrine. The adrenotropic and thyrotropic hormones of the anterior pituitary stimulate the thyroid and adrenals during prolonged sojourn in a cold environment and take part in the thermal adjustments, causing effective resistance against cold.

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[4] Burton, A. C.: Temperature Regulation, in Luck, J. M., and Hall, V. E.: Annual Review of Physiology, Stanford University, Calif., Annual Reviews, Inc., 1939, vol. 1, pp. 109-130. Burton, A. C., and Bronk, D. W.: Am. J. Physiol. **119**: 284, 1937.

[5] Du Bois, E. F.: The Mechanism of Heat Loss and Temperature Regulation, Lane Medical Lectures, Stanford University, Calif., Stanford University Press, 1937, vol. 3, no. 4.

[6] Clark, G.; Magoun, H. W., and Ranson, S. W.: J. Neurophysiol. **2**: 61 and 202, 1939. Keller, A. D.: ibid. **1**: 543, 1938. Keller, A. D., and Hare, W. K.: Proc. Soc. Exper. Biol. & Med. **29**: 1067 and 1069, 1932. Ranson, S. W.: A. Research Nerv. & Ment. Dis., Proc. (1939) **20**: 342, 1940.

TYPES OF HYPERTHERMIA

According to the French physiologist Richet,[9] the various types of hyperthermia may be classified into two important groups: (1) passive fever, which is undergone by the organism, and (2) active fever, which is aroused by the organism. Hot baths, long wave diathermy, short wave diathermy, the Kettering hypertherm (hot humid air) and luminous and nonluminous heat cabinets are included among the means of inducing passive fever. Under such conditions the body does not make any effort to raise its own temperature. Effort is exerted to become cooler; in other words, the heat-eliminating mechanisms usually are put into action.

Active fever is aroused by the organism and may be induced by injection of foreign proteins, malarial parasites, typhoid vaccine or some colloidal substances. In this type of fever, the organism makes an effort to raise its own temperature and the cells are active in producing it. The cells have been stimulated either directly, or indirectly through the nervous system. This is an endogenous febrile reaction. Accompanying the active fever induced by foreign proteins or by typhoid vaccine administered intravenously, the manifestations of shock usually appear, whereas with the passive fever induced by physical means there are no manifestations of shock.

Chronologically the phases of the febrile reaction produced by intravenous administration of typhoid vaccine can be arranged as follows: (1) prodromal phase, (2) chill phase, (3) flush phase and (4) defervescence phase.

Some of the more important signs and symptoms of these phases are the following: 1. During the prodromal phase yawning, stretching, general malaise, abdominal unrest, nausea, chilliness, pallor and weakness with some headache usually appear. Altschule and Freedberg [10] stated that during the prodromal phase of an endogenous febrile reaction no significant physiologic or chemical alterations can be observed but the chill phase is characterized by a sympathetic discharge leading to marked generalized vasoconstriction which causes circulatory stasis of variable degrees. 2. During the chill phase there is a general increase of muscle tone and a definite feeling of cold with shivering, chattering of teeth, severe pallor, cyanosis, low cutaneous temperature and rising body temperature. Johnson and associates [11] reported that the spasm of cutaneous blood vessels during the chill was due to activity of the sympathetic system and that in sympathectomized limbs there was no spasm of the cutaneous vessels during a chill caused by injection of typhoid vaccine. 3. During the flush phase there is a general feeling of warmth and relaxation with congestion, redness, sweating and high cutaneous and internal temperatures. 4. During the defervescence phase there occurs a gradual diminution of congestion, redness and body temperature.

The following are some of the salient characteristics of hyperthermia produced by physical means: The prodromal phase and its manifestations are absent; the chill phase and its manifestations are absent; the flush phase develops gradually from the onset with consistent increase of blood flow, and defervescence usually sets in as soon as the physical agent used as a source of heat is discontinued.

The beneficial effects obtained from the induction of hyperthermia are not necessarily due to the fever per se, for certain treatments have helped without elevation of body temperature. This has led to the use of the expression "pyrotherapy without fever." Furthermore, a patient may have a very high temperature and yet get no benefit from it. If it should ever be proved that the benefit derived from pyrotherapy is due to the fever per se, then the hyperthermia produced by physical means would be the method of choice, because, as mentioned previously, this type of fever is associated neither with prodromas nor with chills and the manifestation of shock.

Why does fever occur in the organism? In general, it can be definitely stated that fever occurs as a result of imbalance of the heat-producing and heat-eliminating mechanisms. If heat loss is reduced or if heat production is increased without an accompanying increase of heat elimination, a rise of body temperature is bound to occur. Hardy [12] stated that a normally functioning heat-eliminating mechanism can rid the body of excess heat up to twelve times the basal heat production. If this heat were conserved, it would suffice to raise the temperature of the body to 50 C. (122 F.) in thirty-five minutes. A relatively small increase of heat production, if associated with a large reduction of heat loss, such as occurs in malarial chills, can produce very high temperature. This shows that in the development of fever the mechanism of heat loss is as important as that of heat production. Fever can be easily induced by hot baths, by hypertherm cabinets (hot humid air) or by luminous and nonluminous heat cabinets because, under such conditions, the body is unable to use the skin to eliminate its heat as it normally does. As mentioned previously, the fever produced by such physical agents is neither ushered in by a prodromal phase nor preceded or followed by chills. Furthermore, the flush phase of this type of fever is associated with extreme vasodilatation. In fact, the pink color of the skin all over the body is a prominent feature of fever induced by physical means.

SYSTEMIC EFFECTS OF HEAT

Changes in body temperature, whether as a result of severe environmental variations or of infectious, metabolic or toxic agents, produce more or less profound effects on the various biologic processes within the body. As has been stated in the preceding discussion, the heat to which the body reacts may have its origin in extrinsic factors or internally from metabolic processes. For clarity the physiologic effects of heat will be considered in relation to the body systems with which they are connected.

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[7] Hartman, F. A., and Hartman, W. B.: Am. J. Physiol. **65**: 612, 1923.

[8] Cannon, W. B.; Querido, A.; Britton, S. W., and Bright, E. M.: Am. J. Physiol. **79**: 466, 1927.

[9] Richet, C., Jr.: Posology of Therapeutic Fever, in Simpson, W. M., and Bierman, W.: Fever Therapy: Abstracts and Discussions of Papers Presented at the First International Conference on Fever Therapy, New York, Paul B. Hoeber, Inc., 1937, pp. 18-20.

[10] Altschule, M. D., and Freedberg, A. S.: Medicine **24**: 403, 1945.

[11] Johnson, C. A.; Osborne, S., and Scupham, G.: Am. J. M. Sc. **190**: 485, 1935.

[12] Hardy, J. D.: Mechanism of Heat Loss from the Human Body, in Simpson, W. M., and Bierman, W.: Fever Therapy: Abstracts and Discussions of Papers Presented at the First International Conference on Fever Therapy, New York, Paul B. Hoeber, Inc., 1937, pp. 16-17.

Effects on Blood Cells.—McCutcheon [13] noted that the rate of locomotion of leukocytes was affected by temperature in a manner similar to that of a chemical reaction; the maximal rate was reached at 40 C. (104 F.). Madsen and Wulff [14] observed that the normal blood temperature was the optimal temperature for phagocytosis. Krusen [15] studied the blood picture before and after artificial fever at temperatures of 104 to 106.8 F. (40 to 41.6 C.) and obtained an average increase of leukocytes from 7,125 per cubic millimeter of blood before fever to 11,269 after fever. After the fever there was a relative increase of neutrophils and a relative decrease of lymphocytes. Hargraves and Doan [16] observed a characteristic postfebrile leukocytosis which was so constant that they felt justified in designating it as the "febrile hemogram." They found that the peak of leukocytosis, reaching about 40,000 leukocytes or more per cubic millimeter of blood, occurred usually several hours after the cessation of fever. It is believed that artificial hyperthermia induced by physical means exerts an effective mobilization of body defenses against disease.

Effects on the Cardiovascular System.—The ability to withstand high environmental temperature is a good index of a properly functioning cardiovascular system. It is common experience that, during a hot spell, fainting, collapse and even death are often the lot of those with poor cardiovascular reserve. The effects of heat on the cardiovascular system can be classified as cardiac and vascular. The cardiac effects during hyperpyrexia include a disappearance of the common sinus arrhythmia and its replacement by regular cardiac rhythm. The electrocardiographic changes induced by fever are variable and inconsistent. The P-R interval, that is, the conduction time between the atria and ventricles, is shortened during fever.

Heart Rate: Within physiologic limits, the rate of generation and the speed of propagation of impulses are increased under the influence of agents that raise the temperature of the body. This means that a greater number of impulses are traveling to the various organs of the heated body. When a general rise in temperature of the body is produced from heating, the result is an increase in the rate of the heart beat. When a general rise in temperature of the body takes place, the metabolic activity of the pacemaker of the heart (sinoauricular node) is augmented and the initiation and rate of passage of the cardiac impulses along the conductive system are increased. Consequently the heart speeds up under the influence of heat.

It has been observed [17] that in artificially produced fever the pulse rate rises more or less proportionately to the rise in body temperature, in the ratio of about 10 beats for 1 F., much as it does in naturally occurring fever. In our studies on the effects of artificial fever, my colleagues and I obtained an average increase of 10.5 heart beats per minute for every rise of 1 F. in arthritic patients. Hill and Flack [18] obtained a mean increase in pulse rate of 44 beats per minute for a rise of 2.4 C. (4.3 F.) in rectal temperature. Bazett [17a] found with similar baths a mean increase of 37 beats per minute for a rise of 2 C. (3.6 F.).

Cardiac Output: From his study of the pulse curve by the use of the tachogram method, Bornstein [19] concluded that the output of the heart per minute was increased by hot and cold baths; the hot baths increased the heart rate but decreased the stroke volume, while the cold produced the reverse combination. Baths of less than 40 C. (104 F.) cause little change in cardiac output because the decrease in stroke volume is balanced by the increase in pulse rate.[20] Heymans [21] observed with administration of warmth an increased cardiac output too great to be accounted for only by an increase in heart rate; an increase in stroke volume was indicated.

Blood Pressure: The effects of external heat and hyperthermia on the blood pressure are varied.[22] In general it can be stated that external heat in most forms tends to lower the blood pressure and cold tends to raise it. Bazett [17a] noted, however, that a bath of more than 40 C. (104 F.) may give a blood pressure above normal while a cold bath may occasionally induce a temporary fall followed by a rise. In our studies [23] on artificial fever by the use of tub baths the effects on blood pressure were variable. Of the 15 subjects, the systolic pressure showed some rise in 4 subjects, a slight fall in 6 and no change in 5. In 11 subjects there was some fall of the diastolic pressure, in 2 there was no change and in the remaining 2 there was a slight rise. Similarly, the changes in blood pressure as a result of fever induced by the Kettering hypertherm were as follows: Of the 15 subjects studied, 5 showed some rise in systolic blood pressure, 3 showed no change and the remaining 7 showed a slight fall. In all subjects there was a fall of diastolic blood pressure with the exception of 1, in whom no change in diastolic pressure occurred.

The changes in blood pressure occur as a result of interaction of alterations in cardiac output and vasomotor reactions. The rise of blood pressure during exposure to cold is due to increase of cardiac output and to vasoconstriction in the superficial areas of the body. The varying response of blood pressure to warmth is dependent on the degree of vasodilatation, on the degree of alteration in heart rate, on the cardiac output per stroke and per minute and on the pulse pressure. The position of the subject influences venous return and consequently the blood pressure and the differential distribution of the blood to the various parts of the body.

Vascular Tree: In general, it can be stated that heat, no matter from what source, influences the vascular tree in several ways.

1. Axon reflex. The thermal stimulation of sensory receptors in the skin may bring about vasodilatation through the axon reflex.[24] Since the passage of these

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[13] McCutcheon, M.: Am. J. Physiol. **66**: 185, 1923.

[14] Madsen, T., and Wulff, O.: Physiol. Abstr. **3**: 224, 1918.

[15] Krusen, F. H.: Am. J. M. Sc. **193**: 470, 1937.

[16] Hargraves, M. M., and Doan, C. A., in Abstracts of Papers and Discussions at the Fifth Annual Fever Conference, May 2 and 3, 1935, vols. 1-5, p. 51.

[17] (*a*) Bazett, H. C.: Am. J. Physiol. **70**: 412, 1924. (*b*) Adolph, E. F., and Fulton, W. B.: ibid. **67**: 573, 1924.

[18] Hill, L., and Flack, M.: J. Physiol. **37**: 77, 1908.

[19] Bornstein, A.: Ztschr. f. exper. Path. u Therap. **9**: 382, 1911.

[20] Schapals, F.: Ztschr. f. exper. Path. u. Therap. **10**: 222, 1912.

[21] Heymans, J. F.: Arch. internat. de pharmacol. **25**: 1, 1919.

[22] Pemberton, R.: Ann. Clin. Med. **5**: 763, 1927.

[23] Wakim, K. G.; Krusen, F. H., and Elkins, E. C.: Arch. Phys. Med. **29**: 274, 1948.

[24] Langley, J. N.: J. Physiol. **25**: 364, 1900.

impulses is away from the central nervous system, rather than toward it, as is usually expected to take place along sensory nerve fibers, Bayliss [25] called them "antidromic impulses." Axon reflexes play an important role in the cutaneous vasodilatation observed in subjects exposed to heat. Furthermore, the sympathetic nerves are believed to contain vasodilator fibers. While perfusing the hind limbs of dogs, Burn [26] frequently obtained vasodilatation on stimulation of the lumbar sympathetic chain. He suggested the presence of a general system of vasodilator fibers. Lewis and Pickering [27] presented evidence supporting the existence of sympathetic vasodilator fibers in man. This, however, was denied by Uprus and associates.[28]

2. Metabolites. The metabolites liberated in the tissues act as direct vasodilators. Heat increases the speed of chemical reactions occurring in the living organism. The metabolites, liberated at a great rate under the influence of heat, exert their well known direct chemical vasodilator effect on the small vessel bed throughout the body. This brings about two definite effects; namely, (*a*) an increase in the caliber of the blood vessels and (*b*) an increase in the number of patent vessels; that is, under the influence of heat, new vascular channels are widely opened up in addition to the dilatation of those already patent.

3. Vasodilatation from central effects. With a general rise in temperature of the body, the warmed blood circulating through the heat-regulating centers in the hypothalamus will bring about a discharge of impulses to increase the dissipation of heat. Consequently, a generalized vasodilatation is produced and heat loss is increased by radiation, conduction and convection through the skin. The pinkish skin after exposure to microwaves, diathermy, hot baths or any other source of heat is a manifestation of this generalized cutaneous vasodilatation brought about by local and central mechanisms.

Respiration.—The respiratory rate in man is increased with hyperthermia. Sutton [29] reported an increase of 5 to 6 respirations per minute per degree increase in rectal temperature. If the rise of temperature is rapid, definite hyperpnea with deep respiration is observed and a real sensation of air hunger is experienced. The hyperpnea causes a marked fall in alveolar carbon dioxide tension.[30]

The fall in alveolar carbon dioxide tension is accompanied by alkalosis.[31] Landis and associates [30c] reported rises in p_H of the blood plasma varying between 0.12 and 0.33 during experiments with hot baths. The large volumes of carbon dioxide given off as a result of the hyperpnea would increase the respiratory quotient often much above unity. Koehler [31] has shown a maintained alkalosis in febrile patients. The rise of temperature increases the metabolism and lowers the threshold of the respiratory center.

Sweat Secretion.—An important effect of the application of heat to the body is the profuse sweating that takes place during and for some time after the application of heat. Since the skin in man is the most important accessory channel, next to the kidneys, for the elimination of water, salt and certain other [32] constituents (urea, uric acid, creatinine, phosphates and sulfates), the idea of elimination through the skin by application of heat has been widespread. This constitutes the rationale for the long-standing use of the sweating procedure for the nephritides with edema and retention of blood urea and other nitrogenous products. The value of this therapeutic measure in the elimination of salt and water is accepted, but the compensatory excretion of nitrogenous products by way of the sweat glands is doubted.[33] Pemberton [34] stated that, in nephritic conditions accompanied by pronounced evidences from laboratory tests of retention of nitrogen, or by clinical evidences which suggest the toxemia consequent on such retention, the sweating process is to be considered. He and his associates [35] reported that in conditions accompanied by retention of blood nitrogen the sweat may contain nitrogen in amounts larger than normal. In his study of the control of sweating in normal men, Robinson [36] noted that the rectal temperature and rate of sweating increased with increments in work intensity up to values averaging 38.5 C. (101.3 F.) and 850 Gm. per hour in the hardest work. Since the cutaneous temperature was constant in these experiments, he concluded that the increased sweating must have depended on a direct effect of internal temperature on the heat-regulating center and possibly also on stimulation of the center by the increased neuromuscular activity. When the work was kept constant but the effective temperature was varied in another group of experiments, the average cutaneous temperature and rate of sweating increased directly with increasing effective temperature in this range, varying from 28 to 36 C. (82.4 to 96.8 F.) and from 50 to 1,500 Gm. per hour respectively. In this latter group of experiments the stimulus for increased sweating was considered to be dependent entirely on reflexes from the skin.

EFFECTS OF EXCESSIVE HEAT

When exposure to extremely high environmental temperature is sufficiently prolonged, the effects of heat may be so severe that certain crippling clinical states may develop. Among these, three merit differentiation [37]; namely, (1) heat cramps, (2) heat prostration or heat exhaustion and (3) heat hyperpyrexia or heat stroke.

Ill health, in the form of a full-blown chronic organic disease, inadequate sleep, excessive fatigue, senescence, inadequate supply of sodium chloride, dehydration and alcoholism, is an important factor predisposing to the untoward effects of heat.

Heat Cramps.—Heat cramps constitute a syndrome associated with painful tonic and clonic spasms after prolonged exertion in a hot environment. This syn-

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25. Bayliss, W. M.: J. Physiol. **26:** 173, 1901.
26. Burn, J. H.: J. Physiol. **75:** 144, 1932.
27. Lewis, T., and Pickering, G. W.: Heart **16:** 33, 1931.
28. Uprus, V.; Gaylor, J. B., and Carmichael, E. A.: Clin. Sc. **2:** 301, 1936.
29. Sutton, H.: J. Path. & Bact. **13:** 62, 1909.
30. (*a*) Bazett.[17a] (*b*) Bazett, H. C., and Haldane, J. B. S.: J. Physiol. **55:** iv, 1921. (*c*) Landis, E. M.; Long, W. L.; Dunn, J. W.; Jackson, C. L., and Meyer, U.: Am. J. Physiol. **76:** 35, 1926.
31. Koehler, A. E.: Arch. Int. Med. **31:** 590, 1923.
32. Flinn, F. B.: Am. J. Physiol. **70:** 194, 1924. Barbour, H. G.; Dawson, M. H., and Neuwirth, I.: ibid. **74:** 204, 1925.
33. Von Noorden, cited by Matill, H. A., in Barker, L. F.: Endocrinology and Metabolism, New York, D. Appleton and Company, 1922, vol. 3, p. 867.
34. Pemberton, R., in Handbook of Physical Medicine, ed. 1, Chicago, American Medical Association, 1945, pp. 32-41.
35. Pemberton, R.; Cajori, F. A., and Crouter, C. Y.: Ann. Int. Med. **2:** 1243, 1929.
36. Robinson, S.: Federation Proc. **6:** 190, 1947.
37. Talbott, J. H.: Medicine **14:** 323, 1935. Talbott, J. H., in Glasser, O.: Medical Physics, Chicago, The Year Book Publishers, Inc., 1944, p. 588. Lee, D. H. K.: Tr. Roy. Soc. Trop. Med. & Hyg. **29:** 7, 1935.

drome is also recognized as miner's cramps, fireman's cramps and stoker's cramps, commonly appearing in those who labor in the heat of fire rooms, especially if one or more of the predisposing factors is coexistent. Maximal susceptibility is in the first few days before acclimatization is established.

The symptoms of heat cramps develop after a period of muscular twitching. The patient is seized with violent, painful spasms associated with abdominal colic, nausea, vomiting and diarrhea. He becomes stuporous, pallid and covered with sweat. Respiration is embarrassed by intercostal and diaphragmatic spasms giving a picture of mild tetany. The pulse is rapid but strong, and the temperature is slightly above normal. The leukocyte count is elevated; there is hemoconcentration from dehydration with a consequent rise in the erythrocyte count and the plasma proteins. Serum sodium and chloride are low. Sometimes acidosis appears, owing to depletion of fixed base from the body rather than to accumulation of fixed acids. The amount of urine is scanty and the excretion of sodium and chloride in the urine is much reduced, owing to excess elimination in the sweat. The cause of the cramps is probably a disturbance of the electrolyte balance, especially of the sodium and calcium ions within and outside active muscle tissue. Heat cramps can be prevented by the intake of 0.2 per cent sodium chloride solution or dilute Ringer's solution during the period of severe exertion in a hot environment.

Heat Prostration or Heat Exhaustion.—This syndrome is characterized by collapse without elevation of body temperature during exposure to an excessively hot environment. During the collapse, manifestations of peripheral vascular failure, with pallor, poor venous return and hypotension, are present. The body temperature is not far from normal and the heart rate is usually less than 100 per minute. The findings in the blood and urine show minor deviations from normal. Adequate water and salt to maintain optimal concentration within the body during exposure to high temperature and the avoidance of the predisposing factors are highly preventive.

Heat Hyperpyrexia or Heat Stroke.—This is often spoken of as "thermic fever" or "sunstroke." It is a syndrome consisting of high elevation of body temperature resulting from exposure to excessive heat. Usually those afflicted with chronic degenerative conditions, especially in the late decades of life, are highly susceptible. The onset of acute symptoms is usually preceded by partial or complete cessation of sweating, which is indicative of a breakdown of the heat-regulating mechanism. Headache, vertigo, fainting and abdominal distress are premonitory symptoms. Delirium and coma may develop in those severely affected and the chances for recovery are slim. Temperatures as high as 110 F. have been reported. Whenever the rectal temperature is above 106 F. the prognosis is bad and profound shock, convulsions and circulatory collapse are usually terminal. The mortality rate may be as high as 50 per cent. Leukocytosis is present; acidosis may develop, and casts may be present in the urine. In the presence of pulmonary congestion, bronchopneumonia may become a dangerous complication. Necropsy findings show generalized congestion of the brain, lungs and abdominal viscera, and minute hemorrhages may be present.

REPORTS OF THE COUNCIL

The Council on Physical Medicine has authorized publication of the following reports. HOWARD A. CARTER, *Secretary.*

GENERAL ELECTRIC CRYSTAL CONTROLLED MODEL D INDUCTOTHERM ACCEPTABLE

Manufacturer: General Electric X-Ray Corporation, 4855 W. McGeoch Avenue, Milwaukee 14.

The Model D Inductotherm is a high frequency generator of electric energy designed for production of heat within human tissues by means of electromagnetic induction. The application to the human body can be made with either the cable or the disk electrodes, both of which are available.

The height of the unit is 109 cm. (43 inches). The other dimensions are 50 by 66 cm. (19½ by 26 inches). The shipping weight is 200 Kg. (441 pounds). For operation it requires alternating current at 100 to 130 volts and 15 amperes. The power input is stated to be 1,800 watts and the output over 200 watts at 13.56 megacycles per second. Accessories include a flexible arm, a disk electrode, a cable electrode, a wall rack and a space set.

The Federal Communications Commission has granted type approval for the Inductotherm Model D, and the Department of Reconstruction and Supply of the Canadian government has approved it. The apparatus is listed by the Underwriters' Laboratories, Inc.

Model D Inductotherm has been tested in a laboratory and clinic acceptable to the Council. It was found to be well made, convenient to operate and a satisfactory source of heat for the administration of diathermy.

The Council on Physical Medicine voted to include the General Electric Crystal Controlled Model D Inductotherm in its list of accepted devices.

PURITAN PM-250 MASK AND BAG ACCEPTABLE

Manufacturer: Puritan Compressed Gas Corporation, 1240 W. Jackson Boulevard, Chicago 7.

This assembly is designed for the administration of oxygen or of gaseous mixtures containing oxygen to human subjects. It consists of the following parts, which may be purchased separately: (1) a nosepiece, made of light plastic, capable of being fitted to various sizes and shapes of nose, and equipped with an adjustable vent; (2) a supply bag, made of latex and provided with an automatic relief valve; (3) an adjustable head strap made of pure gum rubber; (4) an aluminum bag-to-hose connection, and (5) 152 cm. (5 feet) of latex supply tubing. The shipping weight of the whole is 900 Gm. (2 pounds).

The apparatus, on investigation, was found to be satisfactory for use in the various conditions in which oxygen therapy has been demonstrated to be of value. While the advertising also mentions the treatment of migraine, the Council does not consider the oxygen treatment of migraine to have proved to be effective.

The Council on Physical Medicine voted to include the Puritan PM-250 Mask and Bag in its list of accepted devices.

PURITAN SF-2 OXIFIER ACCEPTABLE

Manufacturer: Puritan Compressed Gas Corporation, 1240 W. Jackson Boulevard, Chicago 7.

The Puritan SF-2 Oxifier is an assembly intended to be attached to a tank of oxygen or other gas containing oxygen to be administered to patients. The parts include a single stage regulator, commercial ⅞ inch (22 mm.) cylinder connection, tube type flowmeter, audible warning signal, standard quart (946 cc.) humidifier jar, single and double catheter connections, two catheters, tubing and wrench. The shipping weight of the assembly is 5.4 Kg. (12 pounds).

The Council on Physical Medicine voted to include the Puritan SF-2 Oxifier in its list of accepted devices.

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SATURDAY, DECEMBER 11, 1948

ASSESSMENT TO PROVIDE EDUCATIONAL PROGRAM

At the recent St. Louis interim session of the American Medical Association, the House of Delegates unanimously voted to assess each member of the Association $25. The fund thus provided will be used for a nationwide plan of education on the progress of American medicine, the importance of the conservation of health and the advantages of the American system in securing a wide distribution of a high quality of medical care. The assessment will come to the members through the state and county societies.

A CALL TO ACTION AGAINST NATIONALIZATION OF MEDICINE

One of the most fundamental actions taken by the House of Delegates at the Interim Session was the decision to assess every member of the Association $25 in order to provide a fund adequate for meeting the proposal of the present administration and particularly of the present Federal Security Administrator to nationalize the services of the medical profession through the enactment of a compulsory sickness insurance act covering every person in the United States.

Almost since the day of Mr. Truman's election Mr. Ewing has been engaging in a one man campaign in behalf of this legislation, speaking on the radio, granting interviews to the press, issuing announcements from his office and attempting to break down public confidence in the medical profession by every possible technic. In this activity he has leaned heavily on his brochure "The Nation's Health," which purports to be related in some manner to the National Health Assembly but which represents a perversion of the data there offered and which bears not the slightest resemblance to the official record of the conclusions of the various sections of the National Health Assembly.

Mr. Ewing has leaned largely on two statements which also bear but little or no resemblance to scientifically established fact. He has asserted that some 300,000 lives could be saved if only his proposals were made the law of the land, and he has said again and again that some 70,000,000 persons, or approximately one half the population of the United States, are without proper medical care. The 300,000 persons who he alleges die "needlessly" each year include 40,000 deaths from accidents. The National Safety Council would, no doubt, be interested to know exactly how Mr. Ewing would prevent those deaths. In 1945, 170,000 persons died from communicable diseases, and Mr. Ewing assures us that 120,000 of these persons need not have died. Actually the death rates from communicable diseases in the United States are the lowest in our history, and in 1947, when the total number of deaths was higher than in 1945, only 137,000 deaths were deaths from communicable diseases. Since there is no evidence that any considerable number of these persons died without medical attention, one wonders as to just how Mr. Ewing would propose to save these lives through the enactment of compulsory sickness insurance.

The statement that 70,000,000 persons are without proper medical care simply because 70,000,000 persons happen to have incomes found by statisticians to be less than $3,000 per family per year is another statement without the slightest support in factual evidence. If 70,000,000 Americans were without proper medical care, there would be the kind of public revolt that occurs when one half of a nation's population becomes hungry or happens to be without food or shelter, which are among the necessities of life. Actually the farm population, which is a large portion of those included among these 70,000,000 persons, has relatively low cash income but has also for the most part access to good medical care.

The argument of Mr. Ewing is based wholly on income figures, and Mr. Ewing chooses to disregard entirely a technical term used by economists, namely priorities. Since one out of every four persons in the United States has a motor car, one out of two a radio, and since our people find funds available for such substances as liquors and tobacco in amounts almost as great as the total bill for medical care, one cannot but refer to the priorities and to the lack of suitable education which makes people choose to spend their money for such items rather than for the securing of medical care. Already throughout most of this nation organizations and facilities are available for insurance at exceedingly low rates against the costs of hospitalization and the costs of surgery, obstetrics or other medical care. The people have begun to learn and are insuring themselves increasingly against these costs, but Mr. Ewing suggests that they be forced to pay for their medical care by deductions from their wages or other income rather than voluntarily choosing to protect themselves against the costs of illness as free Americans have chosen since the democracy was established.

The House of Delegates at its meeting just held in St. Louis adopted for the American Medical Association a policy in relation to compulsory sickness insurance which states in unequivocal terms the point of view of the medical profession toward Mr. Ewing's proposals:

"The American Medical Association reaffirms its belief in the application of the principle of medical care insurance on a voluntary basis. The American Medical Association has encouraged and assisted the development of voluntary prepayment plans. Coverage is now provided throughout the country, and protection is being extended rapidly to an ever increasing proportion of our population.

"The American people now enjoy the highest level of health, the finest standards of scientific medical care and the best quality of medical institutions thus far achieved by any major country of the world.

"The great accomplishments of American medicine are the result of development by a free profession working under a free system, unhampered by Government control.

"The experience of all countries where Government has seized control of medical care has been progressive deterioration of the standards of that care to the serious detriment of the sick and needy.

"The American medical profession is unalterably opposed to the institution of any system of medical care which would result in damage to the American public. Our carefully considered opinion is that any scheme of political medicine would be a catastrophe for the American people.

"Compulsory sickness insurance, notwithstanding misleading bureaucratic propaganda, is a variety of socialized medicine or state medicine and possesses the evils inherent in any politically controlled system. It is contrary to American tradition and is the first and most dangerous step in the direction of complete state socialism. The American Medical Association rejects any such scheme as a method of the distribution of medical care; we are equally certain that when the people understand the facts, they also will reject it with the same finality.

"On the basis of experience, we are convinced that voluntary medical care insurance, with the continued support of the American medical profession, can and will solve the economic problem of the distribution of medical care within the existing framework of private enterprise.

"It has been demonstrated that the voluntary method provides a better and less costly service and avoids the imposition of enormous taxation.

"The continuing purpose and determination of the American Medical Association is to maintain and improve the standards of medical care and to make that care available to all our people."

Mr. Ewing in his radio talks and in his interviews has chosen to insult, berate, deride and ridicule the great medical profession of this country. The physicians of the United States may well stand before the people of our country on their record of service to the people. Again and again Mr. Ewing has referred to the fact that the lives of 140,000,000 persons are more important than the wishes of 180,000 physicians. Let the people know that medical care comes from the medical profession and that no compulsory sickness insurance plan or other form of nationalization of medical service can succeed without placing on that medical profession the total burden of service. Mr. Ewing would do well to confer with leaders of the medical profession as to the path that medicine should take in this country rather than relying on the kind of arguments that win cases before juries for great corporations or for criminals.

THE ST. LOUIS SESSION

The St. Louis Session has been almost unanimously praised as one of the most interesting and successful meetings of the American Medical Association. The total registration was 4,526, which included 2,200 Fellows of the Association. So great was the interest that the Board of Trustees is considering the possibility of opening these sessions to all members of the Association instead of limiting them exclusively to the Fellows.

The primary purpose of the Interim Session is the holding of a meeting of the House of Delegates and the provision of graduate medical education for general practitioners of the area concerned. A new technic was used in presenting graduate medical education, and of its abounding success there can be no question. Both the large lectures and the smaller clinics and demonstrations were packed to capacity. The television show provided by E. R. Squibb & Sons, which brought clinics directly from the various hospitals and medical schools of St. Louis to the auditorium, also was crowded beyond its seating capacity throughout the session. The Scientific Exhibit, as usual, was a chief center of interest for many who attended. Exhibitors at the technical exhibit also voiced their satisfaction at the number of persons they were able to see. Several exhibitors commented that a high percentage of the audience were men who had never previously attended sessions of the American Medical Association.

Other features of the session included the entertainment, which was attended by 4,000 visitors, enthusiastic in their reception of the visiting artists, all of national importance. The Grass Roots Conference also enlisted a capacity audience. The final general session was devoted to the presentation of a medal to an outstanding general practitioner, a medal to Father Alphonse Schwitalla for distinguished service in maintaining the ideals of medicine, and a lecture by Professor A. C. Ivy on the relationship of socialized medicine in Germany to the actions of the Nazi medical criminals.

Prior to the Interim Session a Public Relations Conference was held and brought forth a large audience of executives of state and county medical societies especially interested in this aspect of modern medical educational work. A conference was held for state medical society officials and for the editors of state medical journals. This program was also enthusiastically received and served to place before the representatives of state medical societies the problems currently of greatest concern to the medical profession.

The city of St. Louis did its utmost for the success of the occasion. Great thanks are due to the local committee on arrangements, including particularly Drs. Alphonse McMahon and Robert Schlueter, who helped to develop the clinical material for the educational sessions and in making arrangements for the special sessions. Moreover, St. Louis provided perfect weather.

SHALL ARMY MEDICINE BE CONTROLLED BY THE DIRECTOR OF LOGISTICS?

The place of the Medical Department in the staff organizations of the three armed services has become increasingly the concern of medicine and its allied professions during the past ten years. During this period about one half of the practicing physicians of this country have served in the armed services. Probably no other profession or occupational group has contributed so high a percentage of its members to the service of their country.

Among the various factors that have troubled physicians during their tours of duty in the armed services and, particularly, those who have served in the Army, is the placing of medicine among the services of supply. From the philosophic (and unfortunately practical) point of view, those who guide the destiny of the Department of the Army have considered the provision of medical and allied services a supply problem, of a nature similar to that of providing food or clothes, transportation or ordnance equipment. This type of thinking relegated the Office of the Surgeon General to the Army Service Forces during World War II. It placed medical sections in the Service of Supplies echelon in certain overseas theaters of operations. This type of thinking now has placed the Medical Department under the Director of Logistics, as directed in Circular No. 342, dated Nov. 1, 1948, and entitled "Organization of the Department of the Army."

In peace or in war the maintenance of the man power of the armed services in an effective and healthy condition is a prime objective. The Medical Department plays a paramount role in this endeavor. No other advice should be more often sought by the commanding officer, either battalion commander or chief of staff, than that of the surgeon. Now Circular No. 342, paragraph 12 b, states, "under the direction of the Chief of Staff and the Assistant Secretary of the Army on *procurement and related industrial matters* [italics ours] as prescribed in paragraph 4. 1, the Director of Logistics *directs and controls* [again italics ours] the operations and administrative activities of the heads of the Technical Services." The Surgeon General of the Army is listed among the heads of "Technical Services."

Consistently since World War II, the American Medical Association has worked diligently to obtain the proper recognition and status for the medical and allied professions in the armed services. Following strong representations by the Committee on Emergency Medical Service of the American Medical Association, Secretary of the Army Kenneth C. Royall on December 1 announced that the historic position of the Surgeon General as direct adviser to the Secretary and Chief of Staff remains unchanged despite the recent top level reorganization of the Army. The directive outlining the reorganization, Mr. Royall said, will be amended to clarify the Surgeon General's status. The amendment, the Secretary declared, will state:

"In matters of standards of health and medical care of the troops, and the utilization of professional medical personnel, the Surgeon General shall have direct access to the Secretary of the Army and the Chief of Staff."

In April 1945, Secretary of War Stimson said: "I consider that the care of the sick and wounded and the character of the hospitalization in the Army are matters for the direct responsibility of the Secretary of War; also that the Surgeon General should be his principal adviser in regard to these vital matters. To this end I wish it clearly understood that I am to have direct access to him and he to me on such matters whenever either of us deems it to be essential." This statement, Mr. Royall said, was a declaration of long-standing Army policy, reaffirmed in December 1945 by Mr. Stimson's successor, Robert P. Patterson.

Current Comment

RENAL FUNCTION IN INFANTS

With the birth of the child, the task of removing fixed wastes from the circulatory system is transferred suddenly from the placenta to the kidney. At this time the child's kidney is not yet fully developed and it has not reached the state of efficiency characteristic of the adult organ.[1] Infant urine has a low specific gravity which is not increased in severe dehydration to the extent observed in the adult. Both urea and mineral clearances are low when compared with the mature subject on the basis of surface area. The rate of glomerular filtration and the rate of tubular secretion of substances such as creatinine are also low. Infants excrete a smaller fraction of ingested water than do adults, and only little diuresis results from the administration of hypertonic salt solution. If the baby is normal, the kidney will do all the work required of it, but if it is abnormal or must undergo some surgical operation, the pediatrician must assist the kidney to restore the normality of the internal environment. To do this, he requires all the information on renal function which the investigator is able to supply.

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[1] McCance, R. A.: Renal Function in Early Life, Physiol. Rev. **28**: 331, 1948.

ORGANIZATION SECTION

Official Notes

SCIENTIFIC EXHIBIT—ATLANTIC CITY SESSION

The following representatives have been appointed to the Scientific Exhibit from each of the eighteen Sections of the Scientific Assembly to assist in the procurement of exhibits:

Section on Internal Medicine

Thomas C. Garrett, M.D., The Midnight Pass Road, Siesta Key, Sarasota, Fla.

Section on Surgery, General and Abdominal

Walter G. Maddock, M.D., 250 East Superior Street, Chicago.

Section on Obstetrics and Gynecology

Frederick H. Falls, M.D., University of Illinois College of Medicine, 1853 West Polk Street, Chicago.

Section on Ophthalmology

Georgiana Dvorak Theobald, M.D., Chairman, 715 Lake Street, Oak Park, Ill.
Phillips Thygeson, M.D., St. Claire Building, San Jose, Calif.
Edwin B. Dunphy, M.D., Massachusetts General Hospital, Boston.

Section on Laryngology, Otology and Rhinology

James B. Costen, M.D., 722 Beaumont Medical Building, St. Louis.

Section on Pediatrics

Albert V. Stoesser, M.D., 412 Delaware Street, S.E., Minneapolis.

Section on Experimental Medicine and Therapeutics

Robert W. Wilkins, M.D., Evans Memorial Hospital, 65 East Newton Street, Boston.

Section on Pathology and Physiology

Alvin G. Foord, M.D., Huntington Memorial Hospital, Pasadena, Calif.

Section on Nervous and Mental Diseases

A. B. Baker, M.D., University of Minnesota Medical School, Minneapolis.

Section on Dermatology and Syphilology

Francis W. Lynch, M.D., 350 St. Peter Street, St. Paul.

Section on Preventive and Industrial Medicine and Public Health

Paul A. Davis, M.D., 1436 Delia Avenue, Akron, Ohio.

Section on Urology

John H. Morrissey, M.D., Chairman, 40 East 61st Street, New York.
Robert Barnes, M.D., 1216 Wilshire Blvd., Los Angeles.
Earl Ewert, M.D., 7 Longfellow Road, Cambridge, Mass.
John Dees, M.D., Duke Hospital, Durham, N. C.

Section on Orthopedic Surgery

Tom Outland, M.D., Crippled Children's Hospital, Elizabethtown, Penn.

Section on Gastro-Enterology and Proctology

Donovan C. Browne, M.D., 1534 Aline Street, New Orleans.
J. P. Nesselrod, M.D., 636 Church Street, Evanston, Ill.

Section on Radiology

S. W. Donaldson, M.D., 326 N. Ingalls Street, Ann Arbor, Mich.

Section on Anesthesiology

Harold F. Bishop, M.D., Grasslands Hospital, Valhalla, N. Y.

Section on General Practice

M. B. Casebolt, M.D., 4000 Baltimore, Kansas City, Mo.

Section on Chest Diseases

Edwin R. Levine, M.D., Michael Reese Hospital, 29th and South Ellis Avenue, Chicago.

Application blanks for space in the Scientific Exhibit at the Atlantic City Session, June 6-10, 1949, may be obtained from the Section Representatives or from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10, Ill.

Washington Letter

(From a Special Correspondent)

Dec. 6, 1948.

Government Wins Kordel and Urbuteit Cases in Supreme Court

By the narrowest margin, the U. S. Supreme Court on November 22 decided the Kordel and Urbuteit cases in favor of the federal government, thereby providing a strong deterrent to interstate marketing of misbranded "health foods" and therapeutic devices. Involving the same issue — whether labeling literature must be affixed to or physically accompany the product to bring the shipment within the purview of the Federal Food and Drug Act—the two cases were heard together. The *split decisions (5 to 4) had the same dissenters in each case. They* were Justices Black, Frankfurter, Murphy and Jackson.

"It would, indeed, create an obviously wide loophole to hold that these drugs would be misbranded if the literature had been shipped in the same container but not misbranded if the literature left in the next or in the preceding mail," said the majority opinion, delivered by Justice Douglas, in the Kordel case. ". . . one article or thing is accompanied by another when it supplements or explains it, in the manner that a committee report of the Congress accompanies a bill. No physical attachment one to the other is necessary. It is the textual relationship that is significant."

The Court ruled similarly in reversing an appellate court decision in favor of Fred Urbuteit, whose "sinuothermic" machine had been seized by federal agents. "The problem is a practical one of consumer protection, not dialectics," said the *Supreme Court, Justice Douglas also delivering this opinion.* "The fact that the false literature leaves in a separate mail does not save the article from being misbranded."

The dissenting opinion, drafted by Justice Black, applied to both cases. It held that the Food and Drug Act does not cover misbranding of products occurring as long as eighteen months following their shipment.

Disposition of 55 cases in lower courts throughout the country has been held up pending outcome of the Lelord Kordel appeal and the government's appeal in the Urbuteit case. Food and Drug Administration officials feel the Supreme Court decisions will strengthen enforcement immeasurably.

Manual on Premature Infants Published

A 400 page paper-bound book, "Premature Infants: A Manual for Physicians," has just been published by the Children's Bureau. Intended mainly for use by general practitioners, the volume presents the general problem and deals with such survival measures as resuscitation, incubator care, nutritional requirements and prevention and treatment of infections. The book's author is Dr. Ethel C. Dunham, consultant to the *Children's Bureau. Price is $1.25 and copies are purchasable* from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Another new publication of Children's Bureau is a 63 page monograph by Dr. George Wolff on child mortality attributable to rheumatic fever and cardiac diseases. It may be procured (25¢) from the Superintendent of Documents also.

To help finance the International Congress on Rheumatic Diseases, which will be held in New York May 30 to June 3, 1949, U. S. Public Health Service has approved a grant of $15,000 on recommendation of the National Advisory Health Council.

Carnegie Institution Annual Report

Detailed accounts of 1947-1948 progress in its various departments and divisions, including embryology, genetics and the biologic sciences, are presented in the annual report of Carnegie Institution of Washington. The report was published December 10.

GOVERNMENT SERVICES

ARMY

COMMISSIONS FOR PSYCHIATRIC SOCIAL WORKERS

The U. S. Army has reserve commissions available for psychiatric social work officers in the new program of the Neuropsychiatric Consultants Division. Commissions in the Organized Reserve Corps are available to all who qualify educationally and physically with no reference to prior military service. The rank of individual commissions will be commensurate with professional experience and training. Minimum requirement for commission is a master's degree from an approved school of social work, with a major in case work. Applicants with one year's experience can qualify for a first lieutenant's commission and with four additional years for that of captain. Twelve years of experience and training will meet the requirement for the rank of major. At the time of commission, the reserve officer may make application for duty of short periods of ninety days or for extended periods of at least three years. There are opportunities for qualified reserve officers who wish to serve on extended active duty for a three year period in the neuropsychiatric services of the new training centers being opened in the Army. Openings also exist in the Army general hospitals here and overseas. Information about reserve commissions may be obtained from the Personnel Division, Office of the Surgeon General, The Pentagon, Washington, D. C.

MEDICAL MEETING IN TOKYO

U. S. Army medical officers held a meeting with civilian consultants from the homeland recently at the Eighth Army's 361st Medical Station Hospital and 406th General Medical Laboratory in Tokyo. The civilian physicians participating are members of the faculties of medical colleges of the United States and represented one of several similar groups of civilian consultants which the Army Medical Department has been sending abroad to bring to medical officers the latest advances and technical information. At the Tokyo conference, Dr. Joseph M. Hayman Jr., professor of medicine, Western Reserve University Medical School, Cleveland, spoke on "The Collagen Diseases," and Dr. R. W. Waggoner, professor of psychiatry, University of Michigan Medical School, Ann Arbor, on "Diagnosis of Pathologic Personalities."

In the panel on encephalitis, Capt. F. J. Mayer discussed American cases; Major T. O. Berge, chief, Section of Virus and Rickettsial Diseases of the General Laboratory, discussed laboratory diagnosis; Lieut. Col. R. S. Aronson, chief, Section on Pathology of the Laboratory, discussed pathologic changes, and Major A. A. Hellams and Capt. F. M. Phillips discussed psychiatric residual effects.

Lieut. Col. G. W. Hunter, chief, Zoology Section of the General Laboratory, discussed parasitic diseases of Japan. There was a symposium on leprosy with a demonstration of cases led by Dr. M. C. Morton, assistant chief, Medical Service Division, Public Health and Welfare.

The program was introduced by Lieut. Col. W. T. Tigertt, Commandant of the General Medical Laboratory.

TRAINING IN CIVILIAN INSTITUTIONS

The following additional Army Medical Department officers have been accepted for training by the civilian hospitals and schools indicated: Lieut. Col. Harold S. McBurney and Major Humbert N. Riva for courses in orthopedic surgery and gynecology, respectively, at the New York Postgraduate Medical School, New York; Capt. Robert G. Stanley for a course in obstetrics and gynecology at the Long Island College Hospital, Brooklyn; Capt. Donald W. S. Stiff for a course in radiology at the Mary Fletcher Hospital, Burlington, Vt.; First Lieut. Robert W. Puckett for a course in internal medicine at the Huntington Memorial Hospital, Pasadena, Calif., and, as first lieutenants for intern training, Samuel P. Oast at the Bellevue Hospital, New York; Robert L. Sherman at the City Hospital, Welfare Island, New York; Joseph L. Girardeau at the Grady Memorial Hospital, Atlanta, Ga.; Robert S. Taylor at the Methodist Hospital, Indianapolis; Joseph M. Damron at the Medical College of Virginia, Richmond; Kenesaw Mannings at the Provident Hospital and Training School, Chicago; Harold G. Carstensen at the University of Chicago Clinics, Chicago; Hugh H. Curnutt at the Scott and White Hospital, Temple, Texas, and Winston C. Jesseman at the Cincinnati General Hospital, Cincinnati.

SCIENTIFIC MISSION TO JAPAN

The Department of the Army announced November 17 that a mission composed of five American scientists selected by the National Academy of Sciences was expected to arrive in Japan late in November to review progress made by Japanese scientists on development of democratic national organizations for scientific activity. The mission arrived at the time that 40,000 Japanese scientists representing all fields of research were participating in the election of 210 members of Japan's first National Science Council. This election is said to be the first attempt of scientists of any country to elect at large members of its supreme scientific organ. The United States scientists comprising this mission are: Dr. Detlev W. Bronk, chairman, National Research Council, and president-elect of Johns Hopkins University, chairman of the mission; Dr. E. C. Stakman, chief, Division of Plant Pathology and Botany, University of Minnesota, and president-elect of the American Association for the Advancement of Science; Dr. Zay Jeffries, vice president of General Electric Company and general manager of its chemical department; Dr. I. I. Rabi, professor of physics, Columbia University, consultant, Research and Development Board, who was awarded the 1944 Nobel Prize in Physics, and Dr. R. Adams, head, department of chemistry, University of Illinois, and chairman of the scientific advisory group that visited Japan in 1947.

The mission is expected to remain in Japan until about December 18, spending most of its time in Tokyo in discussion with occupational personnel and Japanese scientists and making short visits to Hiroshima, Kyoto, Sapporo and Sendai.

REFRESHER COURSE FOR FLIGHT NURSES

The Surgeon General announces that a ten day refresher course for former flight nurses will be conducted at the Air Evacuation School at Randolph Field, Texas, Jan. 16-28, 1949. Applications are invited from graduate nurses under 35 who have had the flight nurse course in the Air Evacuation School and who are members of the Army Nurse Corps Reserve. Applications should be made to the commanding general of the Army area in which the nurse resides, prior to Dec. 15, 1948. The qualified flight nurse will be ordered to active duty for the ten day period with full pay and allowance for the grade she holds in the Reserve Corps. The purpose of the course is to acquaint nurses with new developments in the duties of the flight nurse in air evacuation. The Air Force estimates that more than sixteen hundred nurses have been trained in Air Evacuation School since the course was established in August 1943.

APPOINT 232 INTERNS

Major General Raymond W. Bliss, the Surgeon General, announced November 16 the appointment of medical school graduates to fill 232 internships in five Army teaching hospitals. The interns, who were selected from among 800 applicants, will on July 1, 1949, after being commissioned first lieutenants in the Reserve, go on duty with full pay and allowances and will be indoctrinated in the military application of their one year's rotating internship training. Later they will have the opportunity to apply for commissions in the Regular Army Medical Corps.

NAVY

EXAMINATIONS FOR APPOINTMENT IN REGULAR NAVY

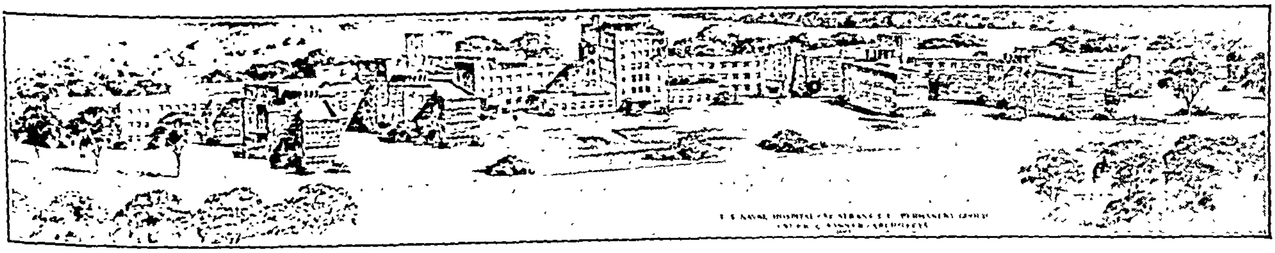
Examinations for the selection of candidates for appointment to the grade of lieutenant (jg) in the medical corps of the Navy will be held at Naval hospitals in continental United States Jan. 24-28, 1949. Graduates of approved medical schools in the United States or Canada who have completed intern training in accredited hospitals or who will complete intern training within four months of the date of the examination, and who are physically and otherwise qualified, are eligible to take the examination. Candidates, who must be less than 32 years of age at the time of appointment, are required to appear before boards of medical examiners and supervisory Naval examining boards at the Naval hospital nearest their place of residence to demonstrate their physical and professional qualifications for appointment.

Following approval by the President of the United States, selected candidates will receive their appointment and orders assigning them to duty in a Naval medical facility for active Naval service. The law provides additional compensation at the rate of $100 a month for each month of active service performed by medical corps officers of the Navy. This is in addition to any pay, allowances or emoluments that medical corps officers are otherwise entitled to receive. Information concerning the procedure of application may be obtained from Naval Officer Procurement offices or from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

in the Navy. They are: George A. Anderson, Washington, D. C.; Wendell W. Buckhaults, Perryton, Texas; John B. Cavenaugh, Chicago; John E. Driscoll, Chicago; Charles B. Foelsch Jr., Maywood, Ill.; Edwin W. Gilley, Gate City, Va.; Roland E. McClain, Lodi, Ohio; Guy D. Niswander, Coopers, W. Va.; Jack W. Rhodes, Estill, S. C.; Joseph O. Romness, Belgrade, Minn.; Paul L. Rowan, Seattle; Carlton L. Sexton, Pensacola, Fla.; Joseph T. Sheridan, Morton Grove, Ill.; James M. Sinnett, Spencer, W. Va.; Eugene Y. Smith Jr., Charleston, S. C.; Winston F. Whipple, Long Beach, Calif., and George C. Wilson, Tecumseh, Mich.

THE LARGEST NAVY HOSPITAL CONTRACT EVER AWARDED

The Navy announced November 3 that construction had started on the new buildings for the Naval hospital at St. Albans, Queens, New York city. This is said to be the largest hospital contract ever awarded by the Navy's Bureau of Yards and Docks. The $14,823,000 project, including nine buildings, is expected to be completed in two and a half years. This hospital was planned before the war, and foundations for the construction were laid at that time. Four ward buildings in the original plans have been eliminated from the present contract. The new permanent buildings will be located directly in front of the old facilities on the site which was formerly part of the St. Albans Country Club. The largest unit ever built for cancer therapy,



Navy Hospital at St. Albans, N. Y.

NEW REGULAR OFFICERS

Lieut. Comdr. Frances L. Willoughby of Pitman, N. J., and Lieut. Trowbridge R. Mafit of Chicago have transferred from an active reserve status to the Medical Corps of the Regular Navy. Lieut. Comdr. Willoughby is the first woman medical officer to transfer to the Regular Navy.

Lieut. Doris Cranmore of Eloise, Mich., of the Medical Allied Science Section, who recently was appointed in the Regular Navy, is the first woman to be accepted in the Medical Service Corps. She is on duty at the Medical Center, Bethesda, Md.

Lieutenant Commander Leo S. Madlem Jr. has recently transferred from active reserve status to the medical corps of the Regular Navy.

POSTGRADUATE TRAINING

The following medical officers have been nominated for duty under instruction in the fields of postgraduate training indicated: Comdr. Nicholas Musso, M.C., of Washington, D. C., to a residency in obstetrics and gynecology at the Naval Hospital, St. Albans, Long Island, N. Y.; Lieutenants (jg) Frederick W. George III, M.C.R., of Burgettstown, Pa., to a residency in radiology at the Naval Hospital, San Diego, Calif.; Charles L. Lear, of Montebello, Calif., to a residency in general practice at the Naval Hospital, Long Beach, Calif., and William C. Turville, M.C., of Revere, Mass., to a residency in surgery at the Naval Hospital, St. Albans, Long Island, N. Y.

NEW NAVY INTERNS

Seventeen new members of the Navy's Medical Intern Training Program have accepted commissions as lieutenant (jg) in the Medical Corps Reserve and have reported for their first active duty in internships at civilian medical institutions. On completion of their internships, they will serve on active duty according to the Navy, a 20,000,000 volt betatron, will be constructed underground and connected through a tunnel with a ward building housing the St. Albans Cancer Clinic. The equipment will include also a 1,000,000 volt x-ray unit. The complete installation will include the betatron therapy building, six three-story ward buildings, a six-story administration and treatment building and a two-story building for hospital personnel. The architects are York and Sawyer, New York.

PERSONALS

Captain Glenn S. Campbell, M.C. (Retired), of Alhambra, Calif., has voluntarily requested recall to active duty and will be assigned to the Naval Hospital, Long Beach, Calif.

Lieut. (jg) Morton J. Aronson, now at the Naval Hospital, St. Albans, N. Y., has been nominated for a residency in psychiatry at the Naval Hospital, Bethesda, Md.

Lieutenant (jg) George M. Stevens, M.C.R., of Angleton, Texas, has reported to the Naval Hospital, Portsmouth, Va., for his first active duty.

Captain Bernard S. Pupek, M.C., U.S.N., Retired, has requested recall to active duty.

The following medical reserve officers have requested recall to active duty: Comdr. Roscoe M. Waterhouse of Bronx, N. Y., who will be assigned to the Naval Recruiting Station at Springfield, Mass.; Lieut. Robert G. Dunn Jr., of Richmond, Va., to the Naval Hospital, Philadelphia, and Lieut. Benjamin F. Gundelfinger of Richmond, Calif., to the Naval Station, Treasure Island, San Francisco.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Doctors' Breakfast Club.—The Doctors' Breakfast Club of the San Fernando Valley Branch of the Los Angeles County Medical Association, formed eighteen months ago, meets every Wednesday morning at 8 o'clock in the Sky Room of the Lockheed Air Terminal in Burbank. The plan is being imitated locally and elsewhere in the county. One topic is presented for discussion at each meeting; emphasis is placed on practical factors involved, and research and historical references are avoided.

Honored for Tuberculosis Control Work.—Dr. Irving M. Schor, Visalia, was a recipient of the Tulare County Tuberculosis and Health Association's annual medical award for tuberculosis control in the county. It was presented at the meeting of the Tulare County Medical Society November 18. The purpose of the award, which the association plans to make an annual custom, is to give recognition to physicians in the county who are extending help and cooperation in solving the tuberculosis problem.

Not One Bona Fide Case Reported.—The Alameda County Medical Association has advertised a guarantee of medical care for all who need it regardless of their ability to pay. From the 750,000 persons in the county there has been not one bona fide case reported to the headquarters office of any one's being refused medical care because of lack of money with which to pay the doctor. The association has also repeatedly advertised a request for complaints on excessive fees and other unethical acts, and reports that although there have been answers to the request they have been few and even these usually proved to be primarily a misunderstanding.

CONNECTICUT

Narcotic Violation.—Dr. Louis Klein, Hartford, pleaded guilty to violation of the Federal Narcotic Code in the district court at Hartford, and on September 8 sentence was suspended and he was placed on probation for five years.

Major Activities of Department of Health.—The Connecticut State Department of Health has published an attractive blue and white 12 page pamphlet, the purpose of which is set forth in its title, "Major Activities." The organization of the department's nineteen bureaus and divisions and their function in public health are clearly stated.

Vesalius Collection on Display.—The works of Andreas Vesalius, father of modern anatomy, are now on display in the Yale Medical Library, New Haven. The exhibit comprises writings ar [illegible] from the Vesalius Collection in the Yale School of [illegible] Library brought together by the late Dr. H [illegible] display will remain in the Yale Medical Library through December. Angered by the criticism of his work, Vesalius gave up his research and teaching and went into a self-imposed retirement. Not until many years after his death were his theories and discoveries accepted. The Yale Medical Library exhibit also includes Vesalius' thesis, many reproductions of drawings from his works and selections from his lesser known medical writings.

ILLINOIS

Special Society Meetings.—The Illinois Psychiatric Society, meeting in Chicago December 2, heard a "Symposium on Mind and Brain in Psychiatry." The participants speaking by invitation were Dr. Ralph W. Gerard, Dr. Warren S. McCulloch and Dr. Ward Halstead.——Dr. Alex J. Arieff, Chicago, addressed the Illinois State Physical Therapy Association December 1 on "Electrodiagnostic Testing in Peripheral Nerve Injuries."

Chicago

Hospital News.—Ravenswood Hospital opened its new $1,500,000 addition November 13. It provides room for one hundred additional beds and allows for expansion of the x-ray, laundry, pharmacy and dietary departments.

The Thirteenth Fenger Lecture.—The thirteenth Christian Fenger Lecture of the Institute of Medicine and the Chicago Pathological Society will be delivered at the Palmer House Jan. 10, 1949 at 8 p.m. by Dr. Dallas B. Phemister on "Circulatory Disturbances of the Skeletal System."

Lectures on Fertility.—Two visiting lecturers will address the Chicago Medical Society December 15 at 8 p.m. in the John B. Murphy Memorial Auditorium. Dr. Robert S. Hotchkiss of Cornell University Medical College, New York, will speak on "Procedures in the Investigation of Male Fertility," and Dr. Charles L. Buxton of Columbia University College of Physicians and Surgeons, New York, on "Gynecological Aspects of Sterility."

Grants for Research.—Grants totaling $22,462 have been awarded to the University of Illinois' Chicago Professional Colleges as follows: A grant of $10,800 from the U. S. Navy for continued research in the prophylaxis and treatment of experimental hypertension to the department of physiology under the direction of Dr. George E. Wakerlin; a grant of $4,882 from the American Society of Heating and Ventilating Engineers for studies in physiologic adjustments of human beings to rapid changes in environment to the department of medicine under the direction of Dr. Robert W. Keeton; $3,780 from the U. S. Public Health Service for research on cephalometric roentgen study of the growth of the human head from the eighth to the fifteenth year to the College of Dentistry under the direction of Allan G. Brodie, Ph.D.; $2,000 from the Illinois Federation of Women's Clubs to Dr. Danely P. Slaughter for a fellowship in cancer, and $1,000 from the American Medical Association for studies on pancreatic function to the department of surgery under the direction of Dr. Warren H. Cole.

Personals.—Dr. Klaus R. Unna, associate professor of pharmacology, University of Illinois College of Medicine, was recently a guest lecturer at the International Dermatological Congress in Hamburg, Germany. He spoke on "Recent Advances in Antihistamine Therapy."——Dr. Robert A. Esser has been appointed assistant director of the Behavior Clinic of the Criminal Court of Cook County. Dr. Esser is a graduate of Northwestern University School of Medicine, 1945. He was head of neuropsychiatry at the U. S. Naval Hospital at Pensacola, Fla., prior to his recent discharge from the navy.——Mr. Frank R. Shank, assistant superintendent of clinics, University of Chicago, has been appointed to direct the administration of Chicago Lying-in Hospital and dispensary of the university. Mr. Shank, who became assistant superintendent of the clinics in 1947, will retain other administrative duties in the University Clinics.——Dr. Jacob P. Greenhill recently returned from South America, where he lectured in Spanish. He was made honorary professor at the University of San Marcos, Lima, Peru, and received honorary memberships in nine societies devoted to obstetrics, gynecology and sterility. He was also a guest of the Second Brazilian Congress on Obstetrics and Gynecology.

KANSAS

Annual Cancer Conference.—The first annual Midwest Cancer Conference will be held at the Broadview Hotel, Wichita, Jan. 20-21, 1940, under the sponsorship of the Kansas Medical Society and the Kansas Division of the American Cancer Society. There will be no registration fee. Eight guest speakers will present two papers each during the scientific program, and Dr. Charles S. Cameron, medical director of the American Cancer Society, will be the banquet speaker January 20. Round table luncheons will be held each day. Physicians from Kansas and neighboring states are invited.

Dinner Honoring Dr. Nesselrode.—At a dinner given by the board of directors of the Kansas Division of the American Cancer Society in Wichita October 27, Dr. Clifford C. Nesselrode, Kansas City, was honored on the occasion of his retirement as president. Dr. Nesselrode has served on the board of directors of the American Cancer Society since its founding and has been president of the Kansas Division since its organization. He also served as chairman of the Kansas Medical Society's first Committee on Control of Cancer. Dr. Robert H. Riedel, Topeka, gave the principal address.

MICHIGAN

Society News.—The Detroit Dermatological Society has elected the following officers for 1948-1949: Dr. Clarence E. Reyner, Detroit, president; Dr. Frank Stiles Jr., Lansing, president-elect, and Dr. Herbert H. Holman, secretary-treasurer.

Health Center Opened in Detroit.—The Northwest Health Center, the first building planned and built in Detroit for public health purposes, was opened early in October. Biologic supplies, food handlers' physical examination forms and birth certificates are available at the new center. It will serve an area comprised of 16 per cent of Detroit's population.

MINNESOTA

The Sixteenth Judd Lecture.—The sixteenth E. Starr Judd Lecture will be given by Dr. E. W. Alton Ochsner, William Henderson professor of surgery at Tulane University, New Orleans, Jan. 18, 1949, at 8:15 p.m. at the Museum of Natural History, University of Minnesota, Minneapolis, on "The Treatment of Postphlebitic Sequelae by Vasodilatation and Other Measures." The late Dr. E. Starr Judd, an alumnus of the Medical School of the University of Minnesota, established this annual lectureship in surgery a few years before his death in 1935.

Sixteen Counties Accredited in Tuberculosis Control.—Cottonwood County was awarded accreditation certificates for its accomplishments in tuberculosis control at a ceremony in Windom in September. A county is accredited when its tuberculosis rate drops to an average of 10 or less per 100,000 population for a five year period and when not more than 15 per cent of its high school seniors react positively to the tuberculin test. It is the sixteenth county in the state to be accredited. Certificates were awarded by the Minnesota State Medical Association and the Minnesota Department of Health.

Dr. Freeman Goes to Montana.—Dr. George H. Freeman, superintendent of the St. Peter State Hospital, St. Peter, for twenty-three years, resigned October 1 to become superintendent of the state hospital at Warm Springs, Montana. Dr. Burton P. Grimes, former assistant superintendent, succeeds him. Dr. Freeman ends forty-two years of service in Minnesota state institutions beginning at St. Peter State Hospital, moving to the Willmar State Hospital and in 1925 back to the St. Peter institution. Dr. Grimes was a member of the medical staff from 1937 to 1940 and has been assistant superintendent since 1946.

MISSOURI

Dr. Schauffler Honored.—Dr. Robert M. Schauffler, *Kansas City*, was awarded a citation by the R. J. Delano School November 8 for "having rendered outstanding service in the education of crippled children; having continued this counsel over a long period of years and having given professional services to many needy children."

Personal.—Dr. Carl F. Cori and his wife, Dr. Gerty T. Cori, Nobel prize winning professors of biochemistry at Washington University School of Medicine, St. Louis, were awarded honorary doctor of science degrees by Boston University October 22. The ceremony was a part of the one-hundredth anniversary of the founding of Boston University School of Medicine.

NEW YORK

Roentgen Survey in Niagara Falls.—A mass chest roentgenologic survey to cover 60,000 persons is being carried on by the city health department in Niagara Falls with the cooperation of the State Department of Health, the Tuberculosis and Health Association of Niagara County and the Niagara County Sanatorium.

New York City

Third Harvey Lecture.—Dr. Fritz A. Lipmann, associate in biochemistry, Harvard Medical School, Boston, will deliver the third Harvey Lecture of the current series at the New York Academy of Medicine December 16 on "Biosynthetic Mechanisms."

Annual Meeting of James Ewing Society.—The second annual scientific session of the James Ewing Society will be held at Memorial Hospital Jan. 14-15, 1949. The program is as follows: A round table panel, "Relationship of Gastric Ulcer to Gastric Cancer," under the chairmanship of Dr. George T. Pack; a symposium, "Scientific Basis for Chemotherapy in Cancer," by members of the staff of the Sloan-Kettering Institute for Cancer Research, Dr. Cornelius P. Rhoads chairman; a symposium, "Radical Surgery in Advanced Cancer"; Dr. Gray H. Twombly, chairman.

Cancer Committee on Chemicals.—The formation of a cancer prevention committee to collect information about chemicals that cause cancer and to devise methods of preventing persons from coming into contact with such chemicals has been announced in New York. Its chairman is Dr. William E. Smith, a member of the staff of Sloan-Kettering Institute for Cancer Research, a section of Memorial Hospital Center. The committee's work will include testing of materials to find whether they have cancer-producing abilities and then carrying over these findings into everyday life, formulating practical methods for preventing people from coming in contact with these materials.

Hospital Given Large X-Ray Machine.—The Lila Motley League for Cancer Research has raised enough money for the Hospital for Joint Diseases to purchase a 2,000,000 volt x-ray machine for cancer research and treatment and provide a building to house the machine. Delivery is expected some time next summer. It will be operated under the direction of Dr. Milton Friedman. The project is part of the hospital's cancer treatment and research program, which includes the addition of twenty beds for patients and new physics and radiobiologic laboratories. The league is made up of twenty women who are raising funds for cancer research in memory of a friend who died of cancer.

Medical Schools Merge.—Formal agreement has been signed for the union of the New York Post-Graduate Medical School and Hospital with the New York University-Bellevue Medical Center. Simultaneously New York University announced the formation of the new postgraduate school. Through this move the medical center will have two medical schools, the other being the New York University College of Medicine, which will be devoted exclusively to the training of medical students. Dr. Robert Boggs was appointed last June acting dean of the Post-Graduate Medical School of the New York University-Bellevue Medical Center. Associate deans of the new school are Dr. Clarence E. de la Chapelle, formerly associate dean of the College of Medicine, and Dr. C. Travers Stepita of the faculty of Post-Graduate Medical School. Edwin A. Salmon, director of the New York University-Bellevue Medical Center, states that the new move gives added impetus to building plans of the university section of the medical center, for which an 11 acre site has been acquired just north of the Bellevue Hospital. Negotiations between the two schools began December 1946.

NORTH CAROLINA

Dr. Norton Receives Medal.—Dr. John W. R. Norton of Raleigh, head of the North Carolina State Board of Health, received the first Reynolds Medal and scroll at the October meeting of the North Carolina Public Health Association in Durham. The medal, given in honor of Dr. Carl V. Reynolds, Raleigh, former state health officer, is awarded to the association member who presents the most outstanding address or paper at the convention. Dr. Norton received it for his address which outlined the work of the health department and stressed the importance of developing cooperative relationships in public health in the state.

OREGON

Society News.—At a meeting of the Oregon State Society of Anesthesiologists at the University of Oregon Medical School library, Portland; December 8, Dr. John J. Bonica of the Tacoma General Hospital presented a paper on "Regional Anesthesia." There was also a series of short motion pictures beginning at 7 p. m.

Portland to Have Red Cross Blood Bank.—The American Red Cross has chosen Portland as one of its thirty "pilot" cities in a nationwide blood service program for installation of a blood bank service which will open Jan. 1, 1949. The program is sponsored by the Multnomah County Medical Society. Dr. Nicholas P. Sullivan, formerly affiliated with Eli Lilly and Company, Indianapolis, is technical director of the city's regional blood donor service, which will include five Washington and nine Oregon counties. The center will be equipped to process blood fully. Dr. Warren C. Hunter, Portland, is chairman of the medical advisory committee for the blood service program.

PENNSYLVANIA

Personal.—Dr. Lewis J. Kowalski of Philadelphia has been named assistant director of mental health in the State Welfare Department. Dr. Kowalski is a graduate of Temple University School of Medicine, Philadelphia, 1926.

County Society Centennial Celebration.—The one hundredth anniversary dinner and dance of the Bucks County Medical Society was recently held in the Doylestown Armory. Guest of honor was Dr. John B. Carrell of Hatboro, 97, the oldest known physician in Pennsylvania, a graduate of the Jefferson Medical College, Philadelphia, 1876. Among the visitors present were Lieutenant Governor Daniel B. Strickler, representing the governor, Dr. Gilson C. Engel, president of the Medical Society of the State of Pennsylvania, and Dr. Milton F. Percival, both of Philadelphia, representing the Philadelphia County Medical Society.

Philadelphia

Dedicate Blockley Medical Library.—The Blockley Resident and Ex-Resident Association of the Philadelphia General Hospital held its annual banquet meeting and dedicated the new Blockley Medical Library December 7. Dr. Harry E. Ungerleider, New York, director of medical research, Equitable Life Assurance Company, was chairman of the meeting. The library is in the Old Museum Room of the Laboratory Building and will contain nearly 4,000 volumes, including the historically valuable Boerhave's Anatomy, printed in the seventeenth century and recognized as the first book printed about anatomy. Dr. Nathan H. Einhorn, Philadelphia, is chairman of the Library Committee.

Remaining Courses in Cancer.—The School of Medicine of the University of Pennsylvania will present the two remaining special courses in the diagnosis and treatment of cancer for graduate physicians in 1949 under a grant from the Division of Cancer Control of the Department of Health, Commonwealth of Pennsylvania. The second of the three courses will be presented January 17-29 and the third from April 25 to May 6. Application blanks will be sent on request to Dr. Robert C. Horn, Secretary of the Cancer Commission, Hospital of the University of Pennsylvania, Philadelphia 4. The courses are limited to a small group, and applications must be received not later than four weeks before opening date of the course. Tuition and fees and some compensation for the time spent away from regular practice will be paid by the Division of Cancer Control of the State of Pennsylvania, Department of Health.

SOUTH CAROLINA

Five Year Florence County Health Program. — The South Carolina State Board of Health has selected Florence County as the "pilot" county in the state for a coordinated health program. The services of the departments of education, agriculture, extension and public health will be coordinated in the interest of a more extensive and a more adequate health program. Demonstration of the five year program will utilize all available services and facilities of the state and county.

TEXAS

Dr. Callan Honored.—The people of Rotan set aside October 8 as "Dr. Callan Day" in honor of Dr. Chester U. Callan, general practitioner, whose story appeared in the *Saturday Evening Post* October 9. Stores closed during the one hour program which paid tribute to the physician, with Dr. Tate Miller, Dallas, president of the State Medical Association of Texas, as chief speaker. A dinner in his honor and dedication of the high school football game to him that evening were highpoints of the day. Abilene Christian College, of which Dr. Callan is a graduate and trustee, had a program and luncheon in his honor October 19.

County Society Gives Library to State Association.—The Travis County Medical Society Library has been donated to the library of the State Medical Association of Texas, making it available to many physicians in the state. The journal and book collections of the society have been built up gradually since 1930 through appropriations and gifts from individual physicians and their families. Since the war the library has been housed in the basement of the Austin Public Library. However, after the removal of the central offices of the library of the state medical association to Austin this year, the county society voted to have its library assimilated in the larger collection.

WISCONSIN

Dr. Gavin to Head Board of Health.—Dr. Stephen E. Gavin, Fond du Lac, has been appointed president of the Wisconsin State Board of Health, succeeding Dr. Ira F. Thompson, Beloit, who has resigned because of ill health but will remain on the board. Dr. Gavin has been vice president. Dr. Thompson was appointed president of the board at its July-August meeting.

Public Health Conference at Madison.—On December 20-21 a Public Health Conference will be held at the Wisconsin Memorial Union Theater, Madison, under the sponsorship of the Wisconsin Public Health Council, the Wisconsin Association for Public Health, the University of Wisconsin and the Wisconsin State Board of Health. Visiting speakers include:

Haven Emerson, New York, Health Units for the Nation.
John W. Ferree, New York, Organization and Functions of a County Public Health Council.
Roscoe P. Kandle, New York, Community Health Surveys.
Vlado A. Getting, Boston, Functions of a Local Health Department.
Basil C. MacLean, Rochester, N. Y., Coordination of Hospitals and Health Departments.
George D. Cummings, Lansing, Mich., Functions of a Public Health Laboratory.
Ellis S. Tisdale, C. E., Sr., Marietta, Ga., Functions of a Sanitarian in a Local Health Department.
Frederick S. McKay, D.D.S., Colorado Springs, Colo., Fluorine in the Prevention of Dental Decay.
Paul H. Stevenson, Washington, Local Public Health Mental Hygiene Activities.
Margaret Taylor, R.N., Minneapolis, The Public Health Nurse Rations Her Time.

A panel on local health units will be held Monday afternoon and another on Local Public Health Programs on Tuesday; the visiting speakers will take part.

HAWAII

Hawaii Cancer Society.—The newly inaugurated Hawaii Cancer Society has concluded its initial membership and fund-raising campaign with proceeds totaling about $75,000. It is financing a program of cancer education to be conducted by the Department of Public Instruction. In cooperation with the Pan-Pacific Surgical Congress the society also has sponsored a public lecture on cancer.

LATIN AMERICA

New Society.—An Argentinean Society of Logopedia and Phonetics was recently established in Buenos Aires. It is concerned with the various aspects of voice, speech and hearing. The officers are as follows: Dr. Eduardo Casteran, president, and Dr. Renato Segre, secretary.

South American Neurosurgical Congress.—The third South American Neurosurgical Congress will be held in Buenos Aires March 20-27, 1949, organized by the Chair of Neurosurgery of the Faculty of Medical Sciences of Buenos Aires under the auspices of the Argentine government. Subjects of the meeting are surgical treatment of epilepsy, hemostasis in neurosurgery and lobotomies. This congress has been held every two years since 1945. The general secretary is Prof. Dr. Ramón Carilo, Neurosurgery, Paraguay 2201, Buenos Aires.

GENERAL

Gastroenterological Association Contest.—The National Gastroenterological Association is offering $100 and a certificate of merit for the best unpublished contribution on gastroenterology. Contestants residing in the United States must be members of the American Medical Association. Entries for the 1949 prize should be limited to 5,000 words, submitted in five copies accompanied by an entry letter, and must be received not later than April 1, 1949 at the National Gastroenterological Association, 1819 Broadway, New York 23.

Mississippi Valley Society Contest.—The Mississippi Valley Medical Society is offering a cash award of $100, a gold medal and a certificate of award for the best unpublished essay on any subject of medical interest and practical value to the general practitioner. Contestants, who must be members of the American Medical Association, should submit their typewritten manuscripts in five copies, not to exceed 5,000 words, not later than May 1, 1949. For further information address Dr. Harold Swanberg, secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

Meeting of Pathologists.—The north central regional meeting of the College of American Pathologists will be held December 18 at the University of Illinois School of Medicine, Chicago. Subjects to be discussed include "The Medical Legal Practice of Pathology," "Relationship of the Army Institute of Pathology to the Pathologist" and three seminars, "Differential Diagnosis in Certain Lesions of Bones and Joints," "Brain Tumors" and "Diagnosis of Liver Drainage by Functional and Morphologic Methods." Brigadier General Raymond O. Dart, director of the Army Institute of Pathology, Washington, D. C., will be the visiting lecturer.

Rheumatism Foundation Drive.—The Arthritis and Rheumatism Foundation of 535 Fifth Avenue, New York 17, opened in November a four week campaign to raise at least $2,000,000 to develop a nationwide research program to discover the cause and to improve methods for the treatment, cure and prevention of arthritis and other rheumatic diseases; to establish fellowships for research teams and specialists; to develop centers for research, teaching and treatment, and to promote better medical and public understanding of these diseases. The Arthritis and Rheumatism Foundation was formulated last summer (The Journal, July 24, p. 1142).

Act to Abate Pollution of Boundary Waters.—As the result of investigations by the International Joint Commission of the pollution of boundary waters, industries in the Detroit area have made or contemplate making improvements aimed at abating industrial waste pollution and estimated to cost over $6,000,000. The International Joint Commission is a United States–Canadian body established under the terms of a 1909 "boundary waters treaty" between the United States and Great Britain. The first survey of boundary waters was made in 1911, when sewage pollution of lake waters was found responsible for the high typhoid death rates in lake cities. A board of technical advisers made up of two each from the U. S. Public Health Service, the Canadian Department of National Health and Welfare, the State of Michigan and the Province of Ontario was established by the commission to plan and interpret more recent studies. Laboratory work and field studies in the United States were performed by the Public Health Service Environmental Health Center at Cincinnati, the U. S. Geological Survey, the Corps of Engineers, the Coast Guard and the U. S. Air Force. A statement of objectives was prepared by the board and adopted by the commission in April 1948.

Conference of Group Therapy Association.—The annual conference of the American Group Therapy Association will be held in Einhorn Auditorium of the Lenox Hill Hospital, New York, January 21-22. The conference will be preceded by a special meeting on January 21, limited to personnel of state, county and veteran hospitals, which will be given over to an analysis of aims and objectives of group psychotherapy. Ronald Lippitt, Ann Arbor, Mich., and Dr. S. H. Foulkes of the British Institute of Psychoanalysis, will be the main speakers at the Friday evening session, which will deal with "The Role of the Leader in Group Development and Therapy." Topics to be discussed at the other sessions include "Current Research in Group Psychotherapy" and "Clinical Applications of Group Psychotherapy."

Celebrate Anniversary of Kahn Test.—The Conference of State and Provincial Health Laboratory Directors at a dinner meeting November 7 in Boston observed the twenty-fifth anniversary of the first demonstration of the Kahn reaction before the American Public Health Association in 1923. Reuben L. Kahn, Sc.D., Ann Arbor, Mich., was honored at a banquet. The *Journal of the Michigan State Medical Society* devoted much of its October issue to this anniversary. Dr. Kahn developed the Kahn test for syphilis in 1923 while employed as an immunologist of the Michigan Department of Health Laboratories. He is now chief of the Serology Laboratory at University Hospital and associate professor of serology in the department of dermatology and syphilology at the University of Michigan Medical School.

Society Elections.—Officers of the Mississippi Valley Medical Society recently selected Dr. Nathaniel G. Alcock, Iowa City, president elect, and Dr. Harold Swanberg, Quincy, Ill., secretary-treasurer.——At the recent meeting of the American Academy of Pediatrics in Atlantic City, Dr. Edward B. Shaw, Berkeley, Calif., was named president elect and Dr. Warren R. Sission, Boston, succeeded Dr. John A. Toomey, Cleveland, as president. Reelected were Dr. Clifford G. Grulee, Evanston, Ill., secretary-treasurer, and Dr. Edgar E. Martmer, Detroit, assistant secretary.——At the Conference of State and Territorial Health Officers in Washington, D. C., November 14-17, Dr. Robert H. Hutcheson, commissioner of the Tennessee Department of Public Health, Nashville, was elected president succeeding Dr. Vlado A. Getting, Boston. Dr. Leroy E. Burney, state health commissioner of Indiana, continues as secretary-treasurer.

Survey of the Practice of Pharmacy.—The first section of the findings and recommendations of the survey of the practice of pharmacy has been published. The survey was inaugurated by various segments of the profession of pharmacy and the drug industry, but supervised by the American Council on Education. Funds and the work of implementing the recommendations were made available by the American Foundation for Pharmaceutical Education. A large portion of these supporting data will be published later in separate volumes. Among the recommendations in the report prepared under the direction of Edward C. Elliott, president emeritus of Purdue University, are the following: raising the standards of the admission to the nation's seventy colleges of pharmacy; more careful testing and screening of students during the early college training and encouragement of high school men and women of ability to take up the study of pharmacy; general overhauling of the present four year college pharmacy course; organization of a National Convention for Pharmaceutic sciences and increased instruction on the economic aspects of the practice of pharmacy; establishing six year college programs leading to the degree of doctor of pharmacy; creation of a Commission on Pharmaceutical Manpower to insure adequate records for the balancing of supply against demand for trained pharmacists; organization of a National Convention for Pharmaceutical Legislation to formulate uniform controls in the interest of public health, and a system of classifying colleges into A, B and C institutions.

The survey also continues a detailed analysis of more than 13,000 prescriptions assembled from 220 pharmacies, located in 186 cities, towns and villages of 39 states. The results furnish a comprehensive review of modern prescription practice and provide important data for the profession of medicine as well as pharmacy.

FOREIGN

United Nations Fights Pellagra. — The United Nations International Emergency Children's Fund has announced that it recently began to provide supplementary food to aid the cure of more than 35,000 children and women in Rumania suffering from pellagra because of dietary deficiencies. This is in addition to 400,000 who are getting one extra meal daily through the fund. Supplies are distributed through canteens set up by the Rumanian Government.

Institute Against Venereal Diseases.—Dr. Leo Dub, of the Public Health Branch, Office of the Military Government of the United States, Civil Affairs Division, Frankfurt-a.M., Germany, has organized an Institute against Venereal Disease there on request of Deutsche Gesellschaft zur Bekampfung der Geschlechtskrankheiten with the help of the military government and members of the University of Frankfurt Medical School. Besides a department of prophylaxis there will be a library, legal and editorial departments and a section to wage a medical campaign against venereal diseases. The institute has begun operation on a limited scale.

Antituberculosis Vaccination Program.—More than a half million children in Czechoslovakia, Poland and Yugoslavia were tested and half of that number vaccinated during the summer months, at the beginning of the United Nations International Children's Emergency Fund's mass vaccination program. It is being conducted as a joint enterprise with the Danish Red Cross and its Scandinavian associates, in cooperation with the World Health Organization. Work will also be under way this winter in Finland, Greece and Hungary, and negotiations are now going forward in Bulgaria, Italy and Albania. Most of the children were in the rural areas, but with bad weather ahead emphasis is shifting to the cities, where the children are more easily reached. Reports from Czechoslovakia tell that in the villages 90 per cent of the children came or were brought to the centers where the vaccination teams were working, a tribute to the local effort made to impress on the people the importance of this undertaking.

CORRECTION

International Tuberculosis Prevention.—In the Current Comment "International Tuberculosis Prevention," in The Journal, Nov. 27, 1948, page 973, line 24, the words "positive reactors" should read "negative reactors."

Marriages

Charles Earl Miller, Hackettstown, N. J., to Miss Jacqueline L. Munley of Coral Gables, Fla., in Radnor, Pa., September 11.

James George Sullivan, South Amboy, N. J., to Miss Estelle Marie Hess of Capitol Heights, Md., November 6.

Henry M. Larson, Morristown, N. J., to Mrs. Etta Carrington Brown Pitney in Mount Vernon, October 30.

John Francis Dillon, Washington, D. C., to Miss Frances Joanne Niehaus, in Arlington, Va., September 22.

Mary H. Rowley to Mr. William A. Busino, both of Schenectady, N. Y., in Milton, Vt., recently.

Leonard S. Sutton, Providence, R. I., to Miss Harri G. Marcus of New York, November 7.

Frank J. Sanzaro to Miss Patricia Ann Woodworth, both of Washington, D. C., November 6.

John T. O'Neil, Patchogue, N. Y., to Miss Elizabeth Mary McGraw of Albany, October 27.

Jason O. Cook Jr., Amherst, Mass., to Miss Jane Santway of Watertown, N. Y., October 2.

Robert Chandler Lake, Detroit, to Miss Eleanor L. Amidon of Greenville, Mich., October 3.

Merlon A. Webber to Mrs. Grace L. Craig, both of Pittsfield, Maine, September 19.

Richard P. Doody to Miss Catherine Elizabeth Purtle, both of Troy, N. Y., October 9.

James Craig Joyner to Miss Lucie Burke Alcott, both of New York, November 10.

George Theodore Schneider to Miss Ann LeJeune, both of New Orleans, October 9.

Joseph Tomarkin, to Mrs. Lenore White Gordon, both of Cleveland, August 8.

Deaths

Ross McClure Chapman ⊕ Towson, Md.; born in Belleville, N. Y., July 13, 1881; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; professor of psychiatry at the University of Maryland School of Medicine and College of Physicians and Surgeons in Baltimore; specialist certified by the American Board of Psychiatry and Neurology; member and past president of the American Psychiatric Association, the American Psychopathological Association and the Baltimore County Medical Society; member of the American Psychoanalytic Association, Southern Psychiatric Association, Association for Research in Nervous and Mental Disease and the American Orthopsychiatric Association; an Associate Fellow of the American Medical Association; fellow of the American College of Physicians; served during World War I; during World War II a member of the special committee on selective service in Washington; for many years superintendent of the Sheppard and Enoch Pratt Hospital; died in the Union Memorial Hospital, Baltimore, September 24, aged 67, of carcinoma.

Richard Dingwell Freeman, Orange, N. J.; born in Dublin, Ireland, in 1866; University of Dublin School of Physic, Trinity College, Dublin, Ireland, 1890; member of the American Medical Association; fellow of the American College of Surgeons; past president of the Society of Surgeons of New Jersey; for many years affiliated with the Orange Memorial Hospital, where he founded the William Pierson Medical Library; founder of the Central Registry for Nurses; on the staff of the New Jersey Orthopedic Hospital; for many years active in the Boys Scouts of America and in 1932 received the Silver Beaver award; died October 2, aged 82, of coronary thrombosis.

Theophil Klingmann ⊕ Ann Arbor, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1892; specialist certified by the American Board of Psychiatry and Neurology, Inc.; fellow of the American College of Physicians; member of the Association for Research in Nervous and Mental Disease and the American Psychiatric Association; served on the faculty of his alma mater; medical director of the Mercywood Neuropsychiatric Hospital; affiliated with St. Joseph's Mercy Hospital, where he died September 19, aged 80, of cerebral thrombosis.

Louise Hopkins Meeker, Scarsdale, N. Y.; Boston University School of Medicine, 1906; Cleveland Homeopathic Medical College, 1909; specialist certified by the American Board of Pathology, Inc.; formerly on the faculty of the New York Post-Graduate Medical School and Hospital in New York; member of the American Association of Pathologists and Bacteriologists; served on the staff of New York Post-Graduate Hospital in New York; died in Grasslands Hospital in Valhalla, N. Y., September 21, aged 69, of cerebral hemorrhage.

Bernard Hyman Appel, Boston; Tufts College Medical School, Boston, 1922; member of the American Medical Association; formerly on the faculty of his alma mater; on the staff of Beth Israel Hospital; died in the Massachusetts Memorial Hospital September 3, aged 50.

Edward J. Bedell, Elsmere, N. Y.; Albany Medical College, 1893; for many years health officer of the town of Bethlehem; died September 23, aged 83, of cerebral hemorrhage.

Bernard Lincoln Branley, Tulsa, Okla.; University of Minnesota Medical School, Minneapolis, 1927; member of the American Medical Association; served in the medical corps of the U. S. Naval Reserve during World War II; at one time superintendent of health; affiliated with St. John's Hospital; died August 29, aged 48, of leukemia.

Charles Perry Burke, Eastgulf, W. Va.; Jefferson Medical College of Philadelphia, 1911; member of the American Medical Association; died September 24, aged 72.

John Carling, Los Angeles; New York University Medical College, New York, 1898; fellow of the American College of Surgeons; formerly affiliated with the Veterans Administration; died in St. Vincent's Hospital September 14, aged 81, of coronary occlusion, hypertension and carcinoma of the prostate.

Bender Zelotes Cashman ⊕ Pittsburgh; Johns Hopkins University School of Medicine, Baltimore, 1909; professor of gynecology at the University of Pittsburgh School of Medicine; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; fellow of the American College of Surgeons; past president of the Pittsburgh Academy of Medicine; served during World War I; affiliated with the Elizabeth Steel Magee Hospital, St. Francis Hospital and Woman's Hospital; died October 7, aged 62.

James Newton Cliatt, Memphis, Tenn.; Louisville (Ky.) Medical College, 1891; served during World War I; died September 4, aged 80, of carcinoma of the pancreas.

Charles Frederick Cogswell, Scituate, Mass.; Harvard Medical School, Boston, 1893; died September 16, aged 83.

Peter Cortelyou Cornell, Buffalo; University of Buffalo School of Medicine, 1888; died September 24, aged 83, of congestive heart failure.

Wendell Phillips Crane ⊕ Holstein, Iowa; State University of Iowa College of Medicine, Iowa City, 1929; city health physician; affiliated with the Sioux Valley Hospital in Cherokee; died in St. Joseph's Hospital, Sioux City, October 17, aged 43, of coronary thrombosis, hypertensive heart disease, diabetes mellitus and anterior poliomyelitis.

Isaac Elmer Davis, Chapman, Kan.; College of Physicians and Surgeons, Medical Department Kansas City (Kan.) University, 1897; died in Abilene August 28, aged 84, of myocarditis and cirrhosis of the liver.

Clinton Lloyd Decker, East Orange, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; formerly mayor of Boonton; served during World War I; died August 30, aged 74, of chronic myocarditis.

Paul Albinus Dineen ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1914: associate professor of clinical surgery at the Cornell University Medical College; served overseas during World War I; medical director of the International Telephone and Telegraph Company; on the staff of the New York Hospital; died in New Milford, Conn., September 20, aged 60, of cerebral embolism.

William Henry Drissen ⊕ Port Washington, Wis.; Northwestern University Medical School, Chicago, 1911; for many years city and county health officer; on the staff of St. Alphonsus Hospital, where he died September 10, aged 71, of cerebral hemorrhage.

Thomas Frank Dunn, Silex, Mo.; University of Tennessee Medical Department, Nashville, 1901; died in the Missouri Baptist Hospital, St. Louis, September 25, aged 76, of carcinoma of the liver.

John William Edwards ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1907; for many years on the staff of the Swedish Hospital; died September 19, aged 79, of heart disease.

Leo Louis Elliott ⊕ Paso Robles, Calif.; George Washington University School of Medicine, Washington, D. C., 1910; member of the Medical Association of Montana; formerly associated with the Indian Service; served during World War I; died August 27, aged 59, of coronary occlusion.

Francis Bartow Enneis, Jacksonville, Fla.; Loyola University School of Medicine, Chicago, 1918; member of the American Medical Association; died September 30, aged 54, of coronary occlusion.

Morris Farkas, West Orange, N. J.; Cornell University Medical College, New York, 1909; member of the American Medical Association; formerly health officer; died in the Orange (N. J.) Memorial Hospital October 6, aged 61, of arteriosclerotic heart disease.

Calvin Barstow Faunce Jr., Boston; Baltimore Medical College, 1904; member of the American Laryngological, Rhinological and Otological Society, American Medical Association, American Otological Society and the New England Otological and Laryngological Association; fellow of the American College of Surgeons; served during World Wars I and II; affiliated with the Infants Hospital, Massachusetts Eye and Ear Infirmary, Massachusetts General Hospital and the Faulkner Hospital, where he died September 22, aged 67.

Frederick Andrew Fischer, Cincinnati; Eclectic Medical College, Cincinnati, 1917; died in the Good Samaritan Hospital September 24, aged 54, of diabetes mellitus.

James Henry Fitzbutler, Chicago; Louisville (Ky.) National Medical College, Medical Department State University, 1896; Illinois Medical College, Chicago, 1904; died August 27, aged 75.

Claude Edward Fortin, Santa Monica, Calif.; McGill University Faculty of Medicine, Montreal, Canada, 1903; L. R. C. P., London, and M. R. C. S., England, 1909; died August 9, aged 69, of coronary thrombosis.

Irvin R. Fox ⊕ Eugene, Ore.; University of Oregon Medical School, Portland, 1921; past president of the state board of medical examiners; member of the American College of Chest Physicians and the North Pacific Society of Internal Medicine; fellow of the American College of Physicians; on the staff of Sacred Heart Hospital; died September 21, aged 57, of coronary thrombosis.

William Mostyn Freeman, Walworth, Wis.; Rush Medical College, Chicago, 1901; died August 7, aged 70.

John Vincent Gallagher, Milford, Mass.; Tufts College Medical School, Boston, 1902; member of the American Medical Association; medical examiner for the Sixth Worcester District; on the staff of the Milford Hospital; died September 17, aged 71.

Charles R. Galloway ⊕ Libertyville, Ill; Rush Medical College, Chicago, 1892; for many years member of the library board; on the staff of the Condell Memorial Hospital; died September 26, aged 77, of carcinoma of the transverse colon and the liver.

Robert Aloysius Gaughan ⊕ Hazleton, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1913; fellow of the American College of Surgeons and the International College of Surgeons; member of the founders group of the American Board of Surgery; affiliated with Hazleton State Hospital; died September 16, aged 58, of coronary occlusion.

James Charles Gower, Gainesville, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1908; member of the American Medical Association; died September 2, aged 72.

Elmer Henry Gramling, Wauwatosa, Wis.; Marquette University School of Medicine, Milwaukee, 1919; member of the American Medical Association; past treasurer of the Milwaukee County Medical Society; served on the faculty of his alma mater; formerly on the staffs of the Misericordia, Milwaukee County and St. Luke's hospitals in Milwaukee; died October 8, aged 52, of coronary sclerosis.

Otto C. Griep, Dayton, Ohio; University of Louisville (Ky.) Medical Department, 1893; died in Grandview Hospital September 18, aged 80, of cerebral hemorrhage.

William Duncan Grigsby ⊕ Blaney, S. C.; Medical College of the State of South Carolina, Charleston, 1906; died in Baptist Hospital, Columbia, September 28, aged 70, of gastric ulcer.

Joseph Hanson, Detroit; Dearborn Medical College, Chicago, 1905; member of the American Medical Association; died in Saginaw, Mich., September 16, aged 72, of congestive cardiac failure and uremia.

Martin O. Hanson, Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1901; died August 19, aged 73, of coronary thrombosis.

Abraham Irving Haskell ⊕ Louisville, Ky.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1916; assistant clinical professor of medicine at the University of Louisville School of Medicine; served during World War I; affiliated with the Jewish Hospital, where he died September 16, aged 56, of cerebral hemorrhage and hypertension.

Thomas Joseph Houlihan ⊕ Ida Grove, Iowa; Rush Medical College, Chicago, 1902; past president of the Ida County Medical Society; died in St. Joseph's Hospital, Sioux City, September 2, aged 71, of right sided cardiac embolus and fracture of right hip.

George Webb Johnson, Hartsville, S. C.; University of West Tennessee College of Medicine and Surgery, Memphis, 1914; Meharry Medical College, Nashville, Tenn., 1916; died August 30, aged 59.

Frank Emerson Jones, Knoxville, Tenn.; University of Tennessee College of Medicine, Memphis, 1930; member of the American Psychiatric Association; affiliated with Knoxville General Hospital and Fort Sanders Hospital, where he died September 2, aged 43, of pulmonary tuberculosis.

Charles Joseph Kennedy, Dearborn, Mich.; Miami Medical College, Cincinnati, 1904; died September 6, aged 66, of bronchopneumonia.

Samuel Harold Korman, Brooklyn; Eclectic Medical College, Cincinnati, 1936; served on the staffs of the Kings County and Brooklyn State hospitals; died in the Beth David Hospital, New York, September 16, aged 38, of carcinomatosis.

Basil Gerald W. Larke, Rogers City, Mich.; Detroit College of Medicine, 1906; for many years township health officer; died in the University Hospital, Ann Arbor, September 5, aged 67, of carcinoma of the head of the pancreas.

Leslie Leverich ⊕ Dallas, Texas; University Medical College of Kansas City, Mo., 1897; member of the Kansas Medical Society and of the Central Association of Obstetricians and Gynecologists; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; past president of the Wyandotte County (Kan.) and Dickinson County (Kan.) medical societies; formerly on the staff of the Bethany Hospital in Kansas City, Kan.; died September 14, aged 82.

William Henry Long, Somerville, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; past president of the Somerset County Medical Society; for many years medical director of the public schools and county physician; for many years surgeon for the Central Railroad of New Jersey, the Lehigh Valley Railroad, the Reading Railroad and the Public Service Company; died September 7, aged 71.

Earl J. Lossing, Grand Rapids, Mich.; Grand Rapids Medical College, 1905; died August 18, aged 67, of hypostatic pneumonia and cerebral arteriosclerosis.

Otto Lowits, Newark, N. J.; Long Island College Hospital, Brooklyn, 1908; member of the American Medical Association; affiliated with the city health department; on the staff of the Newark Beth Israel Hospital; member of the Selective Service System during World War II; reappointed to examine registrants in the new draft; died September 1, aged 62, of coronary occlusion.

Gregory F. Lukianoff, Long Island City, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1923; at one time on the faculty of the University of Virginia in University, Va.; died recently, aged 52, of cirrhosis of the liver and cerebral arteriosclerosis.

Jeremiah Fletcher Lutz ⊕ Glen Rock, Pa.; College of Physicians and Surgeons, Baltimore, 1894; specialist certified by the American Board of Radiology; fellow of the American College of Physicians; member of the Radiological Society of North America, Inc., and the American College of Radiology; served during World War I; affiliated with York (Pa.) Hospital; died in the Veterans Administration Hospital, Fort Howard, Md., September 11, aged 75, of arteriosclerosis.

Michael Francis Maloney, Ogden, Utah; Creighton University School of Medicine, Omaha, 1945; interned at the Queen of Angels Hospital in Los Angeles and the Thomas D. Dee Memorial Hospital in Ogden; died in Price City Hospital, Price, September 9, aged 29, of acute rheumatic fever.

Thomas Hambden Massey, Smithfield, Va.; University of Virginia Department of Medicine, Charlottesville, 1907; member of the American Medical Association; served overseas during World War I; affiliated with Buxton Hospital in Newport News and Lakeview Hospital in Suffolk; died September 18, aged 64, of paralysis.

John William Miller ⊕ Paducah, Ky.; University of Louisville School of Medicine, 1927; member of the American Association of Pathologists and Bacteriologists; formerly surgeon in the U. S. Public Health Service Reserve; served during World War I; affiliated with the Riverside Hospital; died September 27, aged 48, of cerebral hemorrhage.

Ray Thomas Munger, Plainfield, N. J.; Baltimore Medical College, 1909; member of the American Urological Association; fellow of the American College of Surgeons; affiliated with Somerset Hospital in Somerville, Rahway (N. J.) Hospital, Bonnie Burn Sanatorium in Scotch Plains; on the staff of the Muhlenberg Hospital; died September 19, aged 63.

Henry Milo Newkirk, Swink, Colo.; Marion-Sims College of Medicine, St. Louis, 1897; died in Mennonite Hospital and Sanitarium, La Junta, September 7, aged 78, of cerebral hemorrhage and arteriosclerosis.

Walter Kearnes Nihart, Edgerton, Ohio; Michigan College of Medicine and Surgery, Detroit, 1906; died August 20, aged 69, of coronary thrombosis.

Lewis Augustav Oster, Hollywood, Fla.; University of Wooster Medical Department, Cleveland, 1912; died in Fort Lauderdale, Fla., September 14, aged 60, of heart failure.

Donald Robert Owen ⊕ Omaha; University of Nebraska College of Medicine, Omaha, 1918; served overseas during World War II; died September 23, aged 54, of coronary thrombosis.

Percy Leigh Parsons, Traer, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1901; Chicago Homeopathic Medical College, 1902; member of the American Medical Association; died August 21, aged 72.

Adolph August Passer ⊕ Olivia, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1912; died August 18, aged 68, of cerebral hemorrhage.

Edward Allen Pierce, Portland, Ore.; University of the City of New York Medical Department, New York, 1885; member of the American Medical Association and the American Trudeau Society; past president of the Oregon State Medical Society and of the state board of health; at one time attending physician at the Portland Open Air Sanatorium in Milwaukie; died September 25, aged 93.

Charles Banning Porter, St. Johns, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1899; died in the Clinton Memorial Hospital September 19, aged 76, of coronary disease.

Cyrus Marion Rambo ⊕ Zanesville, Ohio; Starling Medical College, Columbus, 1891; on the staff of the Good Samaritan Hospital in Bethesda; died September 20, aged 85, of infection from a tooth and splenic thrombosis.

John Wyeth Ray ⊕ Houston, Texas; Louisiana State University Center, New Orleans, 1938; served in the medical corps, Army of the United States, during World War II; died August 20, aged 40.

Jay Verne Rice, Wellsville, Ohio; University of Louisville (Ky.) School of Medicine, 1910; formerly health commissioner of the city of Wellsville; died in Birmingham, Ala., September 1, aged 66.

Eduard Rischar ⊕ Cameron, Texas; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1900; fellow of the American College of Surgeons; formerly owner of the Cameron Hospital; died August 1, aged 76.

James E. Robbins, Stillwater, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; formerly affiliated with the Danville (Pa.) State Hospital and the Wernersville (Pa.) State Hospital; died in the Bloomsburg (Pa.) Hospital August 27, aged 86, of hypostatic pneumonia.

Luke C. Roberts, Jonesville, Ky.; Louisville Medical College, 1901; member of the American Medical Association; died August 22, aged 73, of cerebral hemorrhage.

Thomas Erle Rucker, Lynchburg, Va.; Medical College of Virginia, Richmond, 1902; member of the American Medical Association; served during World War I; died September 4, aged 67, of carcinoma of the throat.

Frank Theodore Schowengerdt ⊕ Cortland, Neb.; Marion-Sims-Beaumont Medical College, St. Louis, 1902; past president of the Gage County Medical Society; formerly member and president of the school board; at one time mayor of Cortland; served on the staffs of the Mennonite Deaconess Home and Hospital in Beatrice, Bryan Memorial Hospital and St. Elizabeth Hospital in Lincoln, where he died September 12, aged 72.

Abraham W. Schram ⊕ Chicago; Rush Medical College, Chicago, 1896; associate clinical professor of medicine at the Loyola University School of Medicine; specialist certified by the American Board of Internal Medicine; for many years active in the Chicago Health Department; on the staff of the Mercy Hospital; died September 4, aged 73, of cerebral hemorrhage.

Harry Will Shryock, Seattle; Denver College of Medicine, 1900; member of the American Medical Association; served during World War I; for many years on the staff of the Firland Sanatorium; died September 30, aged 76.

Straut Watson Shurtz, Champaign, Ill.; Rush Medical College, Chicago, 1893; member of the American Medical Association and of the Fifty Year Club of the Illinois State Medical Society; formerly affiliated with Champaign County Hospital in Urbana; died in Burnham City Hospital September 24, aged 81, of diabetes mellitus, arteriosclerosis and myocarditis.

Crandall P. Sisco ⊕ Springdale, Ark.; University of Arkansas School of Medicine, Little Rock, 1911; director of the First State Bank; on the staff of the City Hospital in Fayetteville; died August 24, aged 61, of arteriosclerotic heart disease.

William Wilson Sisserson, Yardley, Pa.; Medico-Chirurgical College of Philadelphia, 1916; served during World War I; surgeon in the U. S. Public Health Service reserve during World War II; formerly on the staff of Muhlenberg Hospital in Plainfield, N. J.; in charge of the Veterans Administration outpatient department in Trenton, N. J., where he died September 2, aged 56, of myocardial infarction.

Homer William Smith ⊕ Rochester, N. Y.; University of Buffalo School of Medicine, 1913; served with the city health department; examining physician for the Selective Service during World War II; affiliated with Monroe County Hospital and the Park Avenue Hospital, where he died September 5, aged 63, of coronary sclerosis.

James Arthur Smith, Chattanooga, Tenn.; University of Louisville (Ky.) Medical Department, 1912; member of the American Medical Association; served during World War I; died in Erlanger Hospital August 26, aged 64, of bronchopneumonia.

John Augustus Sperry, San Francisco; Medical Department of Tulane University of Louisiana, New Orleans, 1905; member of the American Medical Association; affiliated with the Children's and Stanford University hospitals; died September 29, aged 66.

Seymour Leopold Spier, New Haven, Conn.; Yale University School of Medicine, New Haven, 1904; for many years police surgeon; died in the Undercliff Sanatorium, Meriden, September 22, aged 76, of carcinoma of the rectum and pulmonary tuberculosis.

Walter David Spoor ⊕ Schenectady, N. Y.; Denver Homeopathic College, 1896; died in the Ellis Hospital August 11, aged 73, of uremia.

Thomas Alexander Steele, McKeesport, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1901; an officer during World War I; served a term in the state legislature; died in the Veterans Administration Hospital, Aspinwall, August 7, aged 68, of hypertensive cardiovascular disease.

Albert Henry Steffens, Anaheim, Calif.; Barnes Medical College, St. Louis, 1900; also a dentist; died October 2, aged 74, of injuries received when he was struck by an automobile while crossing the street.

Lewis H. Sterner, Hanover, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1889; member of the American Medical Association; on the staff of the Hanover General Hospital; died August 27, aged 84, of leukemia and heart disease.

Axel Waldemar Swenson, Van Nuys, Calif.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1901; served during World War I; died August 22, aged 72.

Phillips Jackson Tunnell, Norwalk, Calif.; College of Medical Evangelists, Loma Linda and Los Angeles, 1923; died in Barlow Sanatorium, Los Angeles, August 6, aged 49, of tuberculosis.

George Oscar Wallace, Clayton, Ala.; Medical College of Alabama, Mobile, 1891; member of the American Medical Association; at one time probate judge of Barbour County, member of the county board of education and county health officer; died September 7, aged 80, of embolism and pyelonephritis.

Richard William Walt ⊕ North Hollywood, Calif.; University of Southern California School of Medicine in Los Angeles in 1942; interned at the San Bernardino (Calif.) County Charity Hospital; an officer in the medical corps, Army of the United States, during World War II; affiliated with St. Joseph's Hospital in Burbank, Glendale Sanitarium and Hospital and Behrens Memorial Hospital in Glendale; on the attending staff of Los Angeles County Hospital; died August 16, aged 32, of injuries received in an automobile accident.

Robert Hanford Waterfield, New York; Columbia University College of Physicians and Surgeons, New York, 1933; member of the American Medical Association and the American Psychiatric Association; affiliated with the Lenox Hill Hospital, where he died August 18, aged 52, of acute coronary occlusion.

Mortimer Harold Weiss ⊕ Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1925; served during World Wars I and II; on the staff of the Beth Israel Hospital; died August 6, aged 48, of cerebral hemorrhage.

Ewald Alfred Sigmund Werner ⊕ Los Angeles; College of Physicians and Surgeons, medical department of the University of Southern California, Los Angeles, 1910; affiliated with the Good Samaritan and California Lutheran hospitals; served during World War I; died in Veterans Administration Hospital, Van Nuys, August 30, aged 61, of acute myocardial infarction.

Benedict Nolasco Whipple ⊕ Bristol, Conn.; Yale University School of Medicine, New Haven, 1907; fellow of the American College of Surgeons; on the staff of Bristol Hospital; died August 4, aged 63, of myocardial infarction.

Raymond R. Whitten ⊕ Ionia, Mich.; Detroit College of Medicine, 1912; affiliated with Ionia County Memorial Hospital; died in Blodgett Memorial Hospital, Grand Rapids, September 11, aged 63, of rheumatic heart disease with mitral stenosis.

Oliver Benjamin Winkler, Lebanon, Ill.; St. Louis University School of Medicine, 1927; member of the American Medical Association; affiliated with the Christian Welfare Hospital in East St. Louis; died September 9, aged 47.

James Craven Wood, Cleveland; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; member of the American Medical Association; fellow of the American College of Surgeons; served on the staff of the Huron Road Hospital in East Cleveland; died in Shaker Heights, Ohio, August 29, aged 90, of cerebral hemorrhage and arteriosclerosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 30, 1948.

The Streptomycin Treatment of Tuberculosis

A most important report on the streptomycin treatment of tuberculosis has been published by the Medical Research Council in the *British Medical Journal*. The inquiry was planned and directed by the Streptomycin in Tuberculosis Trials Committee. The work was carried out by clinicians and pathologists in various hospitals. Only once before has any drug been submitted to a controlled trial in this variable and unpredictable disease. This was in 1931, when gold treatment of tuberculosis proved unsuccessful. The present trial was restricted to patients aged 15 to 30 years, with acute progressive tuberculosis of both lungs unsuitable for collapse therapy, a type of case hitherto treated only by rest in bed. Such cases are not common, but 107 patients were chosen in various hospitals. Treatment was carried out at seven centres, 55 patients being allotted to the streptomycin group and 52 to the control group. To avoid any possible bias each patient's group was decided by a statistician using an ingenious system of sealed envelopes. Progress was estimated from the roentgenograms by independent radiologists and clinicians, who did not know from which group the films came.

All the patients were kept in bed on the same general regimen, but the streptomycin group received 2 Gm. of streptomycin daily by intramuscular injection, usually for 4 months. The results were assessed after 6 months. By then 4 streptomycin and 14 control cases were fatal—a difference that would not occur by chance once in 100 times. Considerable improvement was observed in 51% of the streptomycin cases but in only 8% of the controls. This difference was almost entirely accounted for by the remarkable efficacy of streptomycin in patients most seriously ill at the time of the trial. After a year 12 streptomycin patients and 24 controls were dead and the proportion of cases improved had risen to 31% in the controls, whereas in the streptomycin cases the figure was much the same, 56%. The toxic effects of streptomycin, which have been troublesome and dangerous in some other trials, were never severe enough to necessitate cessation of treatment.

Streptomycin can be of great value in acute phthisis, especially early cases before cavities form in the lungs. It is not a "cure" for tuberculosis, nor does it render other treatment obsolete. It must be used with discrimination. Under the treatment the ordinary streptomycin-sensitive bacilli are fairly rapidly replaced by resistant bacilli. This means that the drug may be effective only once during the illness, and the time to give it must be carefully chosen. For the community it means the danger of unsuccessfully treated patients disseminating streptomycin-resistant organisms to others, producing a large number of cases which do not respond to the drug.

Congress of Obstetrics and Gynecology

The twelfth British Congress of Obstetrics and Gynecology will be held in London on July 6-8, 1949, under the presidency of Sir Eardley Holland. The Congress will be declared open by the Minister of Health at 10 a. m. A discussion on modern trends in gynecology will then be introduced by Mr. C. McIntosh Marshall (Liverpool), on "Modern Caesarean Section." At 2 p. m. Dr. Joe Meiggs (Massachusetts) will read a paper. A discussion on pregnandiol will be introduced by Prof. G. F. Marrian, F.R.S. (Edinburgh) and Dr. G. I. M. Swyer (London). On July 7, Prof. G. W. Pickering and Prof. F. J. Browne (London) will introduce a discussion on essential hypertension in pregnancy. At 2 p. m. a discussion on hernia of the pouch of Douglas will be introduced by Mr. C. D. Read (London). One on the management of pregnancy in diabetics will be introduced by Mr. J. H. Peel (London) and Prof. D. M. Dunlop (Edinburgh). On July 8, Dr. J. E. Ayre (Montreal) and Dr. F. G. Spear (Cambridge) will introduce a discussion on the diagnosis and prognosis of carcinoma of the uterus. In the afternoon there will be a discussion on maternal mortality.

The honorary secretaries of the Congress are Mr. A. J. Wrigley, F.R.C.S., and Mr. I. M. Jackson, F.R.C.S., to whom the names of those who hope to attend the Congress should reach by March 31, 1949, at the Royal College of Obstetricians and Gynecologists, 58 Queen Anne Street, London, W.

THE NETHERLANDS

(From Our Regular Correspondent)

Oct. 22, 1948.

Organization of Rh Investigation

In 1946 Dr. J. J. van Loghem Jr., one of the cooperating physicians of the Central Laboratory of the Dutch Red Cross blood transfusion service, undertook to bring together physicians who were interested in the Rh question.

The first meeting, which was attended by a great number of specialists, was presided over by Professor Pondman (Groningen) who started the Rh work in Holland during the war, in 1943, after the thesis of Broman (Sweden) had brought the discovery of this new blood group to the notice of the Dutch serologists. Professor Pondman, who was at the time head of the serologic department of the government's Institute of Public Health in Utrecht, had to contend with many difficulties owing to the entire lack of foreign literature.

In this first meeting a committee was asked to set up an organization to keep the Dutch physicians informed of the progress of the investigations and to promote cooperative research. A program was drawn up, and a few months afterward two members of the committee issued a publication in which they summarized facts concerning the Rh question in other countries, especially in America and the United Kingdom. The serologic investigations were concentrated in the Central Laboratory of Blood Transfusion in Amsterdam under the direction of van Loghem.

From July 1946 to July 1948 the blood of 1,958 families presenting a history of suspected erythroblastosis fetalis was examined. In 980 cases the father was found to be Rh positive and the mother Rh negative. In 707 cases Rh antibodies were detected in the serum of the sensitized mothers. Only in a few cases of active Rh antagonism, Rh antibodies were not detected in the serum of the mother. Rh tests were made on 11,840 donors of forty-five blood transfusion centers. The percentage of Rh-negative persons amounts to 14.2 (rr or cde/cde). In 12 cases Rh antagonism was proved to be the cause of transfusion reactions. In a great number of cases, in which repeated transfusion was necessary, the Rh factor was determined preventively.

It was particularly in the application and the study of exchange transfusion that favorable results of close collaboration became manifest. When in the beginning of 1947 it appeared from American publications that the prognosis for newborn infants affected with hemolytic disease was improved considerably by the application of exchange transfusion, the working committee tried to use this treatment in Holland on a large scale. In one year and a half one hundred and twenty-four exchange transfusions were performed by thirty-three pediatricians, gynecologists and internists. The death rate decreased from 63.5 to 14.5 per cent.

Under the auspices of the working committee for Rh investigations about two hundred physicians and technicians from fifty-five different medical centers have received a course of instruction in Amsterdam in order to acquire the technic of determining the D antigen and examining the serum on complete and incomplete antibodies (by means of the serum of Coombs).

To the scientific program of the Rh department of the Central Laboratory in Amsterdam belongs especially the production of rare Rh test serums by means of artificial immunization of volunteer donors.

Recently J. J. van Loghem published in the *British Medical Journal* (Aug. 14, 1948) a preliminary note on influence of heterospecific immunization on production of Rh antibodies. He proved that the production of these antibodies is stimulated by the administration of bacterial antigens (triple vaccine, typhoid and paratyphoid A and B) and tetravaccine (which includes cholera). In general, only those persons who reacted clinically and serologically to the administration of these vaccines produced Rh antibodies.

Especially noteworthy is the cooperation in this scientific program of a group of female volunteers, three nuns belonging to the Congregation of the Divine Child in Amsterdam. One of them formed a pure C antibody of the hyperimmune form after twenty injections over a period of three and a half months with a titer of 1 : 128.

OSLO

(From Our Regular Correspondent)

Nov. 17, 1948.

The Jacobaeus Memorial Lecture

Professor Jacobaeus died in the autumn of 1937, only 58 years old. In recognition of his outstanding contributions to medicine, the Nordisk Insulin Fund created in 1939 the H. C. Jacobaeus Memorial, the statutes of which provide for a lecture every year by one who has distinguished himself in some field of medicine. The lecture is delivered in rotation in one of the Scandinavian university towns or some other center of scientific medicine. The first lecture was delivered in 1942 in Sweden by Professor Key, who spoke about the contribution which Jacobaeus had made to the surgery of the chest. The second lecture was delivered in Copenhagen in September 1947 by Professor C. H. Best of Toronto. This year an invitation was given to Professor F. G. Young of University College, London, to lecture on the relation of the pituitary gland to diabetes mellitus. This lecture was delivered on October 5 at the Rikshospital in Oslo. Among the foreign members of the audience were Dr. Hagedorn of Copenhagen and Professor Odin of Gothenburg. Professor Olav Hanssen of Oslo was in the chair.

Vaccinia from Boxing?

On November 3 Dr. Per Hanssen, of the Isolation Department of the Ullevaal City Hospital, gave the Norwegian Medical Society an account of the case which gave rise to a nationwide smallpox scare in Norway late last September. The patient was a young Norwegian soldier who took part in an international boxing competition in London September 15-17. On September 20 he noticed a rash on his face for the first time. He continued to be up and about, feeling well, but on his return to Norway a few days later a pustular eruption on his face, neck and right arm at once aroused suspicion and led to his isolation in hospital on September 25. The experts agreed that the eruption was due to either vaccinia or variola, but they could not say more. Laboratory tests in London of material sent by air from Norway pointed to a vaccinia infection, and the absence of any case of variola among the many persons with whom the patient had came in contact before he was isolated left no doubt as to the infection's being vaccinia. Dr. Per Hanssen suggested that the source of this infection may well have been the boxing gloves of one or other of the patient's combatants, but he has so far been unable to ascertain whether any of them had been recently vaccinated before boxing with the Norwegian. The smallpox scare on this occasion was all the greater for the fact that vaccination has of late been much neglected in Norway, largely on account of the fear of vaccination encephalitis.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Oct. 8, 1948.

New Technic for Immunization to Yield Rh Antibodies

Drs. Mario P. Mesquita and Vera Leite Ribeiro, of the Blood Bank of the Fernandes Figueira Pediatric Hospital, Rio de Janeiro, published a report describing a new technic for the immunization of guinea pigs to yield Rh antibodies. The inactivated serums of 25 normal adult guinea pigs diluted to 1:4 was used for the agglutinating tests with 2 per cent suspensions of rhesus red cells in final dilution from 1:5 to 1:80. The citrated blood of the monkeys was first filtered through sterilized gauze and then centrifuged and washed, the centrifugation and washing being repeated several times. After each centrifugation the separated red cells were mixed with more isotonic sodium chloride solution and transferred to another tube, the sediment containing some stroma and broken red cells being abandoned in the first tube. The washing of the red cells was continued until the supernatant fluid did not show the slightest trace of albumin. By this technic, a much higher sensitivity of Rh agglutinins was disclosed at 5 C. than at 37 C., which confirms the previous findings of Diamond and Abelson. In addition, absorption tests disclosed that such enhanced sensitivity derives fundamentally from specific properties of Rh agglutinins and not from a nonspecific cold agglutination. The production of serum by the new technic is still under study before its utilization for diagnostic purposes.

While they were waiting for this serum and still using serums of American manufacture, the writers reported that among 220 white adults, Brazilian-born residents of Rio de Janeiro to be selected for the group of blood donors of the Fernandes Figueira Hospital, the Rh factor reaction was negative in 28 cases, or 13.2 per cent. Previous results reported recently in Brazil in similar conditions by Ottensooner and Pasqualin (São Paulo, 1934, 47 examinations), by Lacaz, Ferreira, Malone and Yahn (Rio de Janeiro, 1946, 445 examinations), again by Ottensooner and Pasqualin (São Paulo, 1947, 1,919 examinations), and by the present writers (Rio de Janeiro, 1947, 212 examinations) showed negative percentages of 15.0, 14.2, 14.7 and 13.2, respectively, which gives the general average negative rate of 13.93 per cent for the combined sample of 1,115 persons from the two greatest cities of Brazil.

Sanitary Conditions of Drinking and Eating Utensils

Dr. Dacio A. Christovam, assistant professor of microbiology at the School of Public Health and Hygiene, São Paulo, published a report on the sanitary conditions of drinking and eating utensils in that city's central district. The study included thirty-two cafés and bars and twelve restaurants. A total of 1,568 utensils taken at random from the washed and disinfected material was examined, in lots of 7 each. At the cafés and bars the total bacteria counts of cups and glasses were respectively 3,863 and 85,331, the average per lot reaching 88,400 for cups and 720,000 for glasses, as against the average number of 100 bacteria per utensil, which is the standard proposed by the American Public Health Association. Only 14.1 per cent of the lots of cups could be considered satisfactory, and none of the lots of glasses complied with the standard. The average temperature of the so-called "sterilizers" for cups was 58.4 C., and 42 and 72 C. were the extreme temperatures found. At the restaurants the average number of bacteria in glasses, dishes, forks and spoons were respectively 45,851, 86,527, 6,613 and 9,095. The maximum averages were 224,000 for glasses, 736,000 for dishes, 55,000 for forks and 62,000 for spoons. Only one lot of glasses of all the material examined from restaurants could be considered satisfactory.

Pneumococci were found in 3.1 per cent of the lots of cups from the cafés and bars and in 4.2 per cent of the lots of glasses and forks from restaurants; hemolytic streptococci in 45.3 per cent of the lots of glasses and in 18.8 per cent of the lots of cups from the cafés and bars, and respectively in 8.3 per cent, 16.7 per cent and 8.3 per cent of the lots of glasses, forks and spoons from the restaurants; pathogenic staphylococci in 15.6 per cent of the lots of glasses and in 21.9 per cent of the lots of cups from the cafés and bars, and in respectively 8.3 per cent, 16.7 per cent, 4.2 per cent and 12.5 per cent of the lots of glasses, dishes, forks and spoons from the restaurants. Tubercle bacilli were not isolated. Coliform organisms were found in 40.7 per cent of the lots examined.

The high number of bacteria present in all types of utensils and the high percentages of lots in which pathogenic microorganisms were found reveal a serious public health problem. They are simply the result of the crude methods of washing and the lack of any attempts at disinfection observed in the course of the study. Dr. Christovam proposes the adoption of simple, efficient methods of washing and disinfection, using hot water from 77 to 82 C., and inorganic chlorine compounds in solutions of 50 to 100 parts per million.

BOLIVIA

(From Our Regular Correspondent)

La Paz, Oct. 18, 1948.

Food Problems

Several studies on the subject of diet were made here in Bolivia, the most important one by a mixed Bolivian-American mission, led by the Hon. Alvert Magruder (Boston) and another one by the National Commission of Bolivia. Their figures were based mainly on research on the urban population, the miners, railroad men and other industrial workers, a group comprising about half of the country's population.

According to those investigations the average daily ration contained only 1,200 calories, 72 per cent of which were provided by carbohydrates, 15 per cent by fats and the remaining 13 per cent by proteins, mostly of vegetable origin. According to the relatively optimistic figures of the National Commission the absolute weights of each factor were: 210 Gm. carbohydrates, 12 Gm. animal proteins, 28 Gm. vegetable proteins and 21 Gm. fat. Thus, not only was the protein intake 50 per cent under the accepted standards, but its relation to the amount of carbohydrates was unsatisfactory, too.

Equally unsatisfactory were vitamin values: vitamin A, 5,820 international units; vitamin B_1, 1.1 mg.; vitamin B_2, 0.9 mg.; nicotinic acid, 9.7 mg.; vitamin C, 98.0 mg., and vitamin D, 11 international units.

Calcium contents remained at only 25 per cent of the standard requirements, while iron intakes were only one third of the normal. The average weight of a full day's ration was only about 700 Gm., and the per capita quota of milk 73 Gm. per day. Relatively well fed were miners, who received a daily average of 2,500 calories, which is still an unsatisfactory quantity for a heavy worker. This group at least received proper amounts of proteins and iron. Because of the continual undernutrition of prospective mothers the birth weights of babies remained relatively low too. Between 7 and 37 per cent (according to different surveys) of the babies born at term weighed less than 2,800 Gm.

The principal cause for this continuous undernutrition was the surprisingly low average income, which was sufficient only to cover the cost of 1,200 calories without leaving any additional allowances for other expenses. There was, for example, but 0.5 per cent of the population who could afford 3,000 calories a day for themselves and for their families as well, without interfering with their other living expenses. About 72 per cent of the investigated group did not earn enough to supply 2,600 calories. In the lowest income group, and thus in the worst fed group, belongs the population of the Indian race. The surprising difference between living costs and incomes is partly due to the fact that nearly 90 per cent of all the consumed food had to be imported from abroad in high prices; this situation could be improved only by creating farms in the vast but scarcely inhabited territory. Besides there is a complete lack of any knowledge as to the ways of rational feeding among the common people. Physical conditions among the native Indian population are continually becoming worse, and today's Indian can hardly be compared in any way, either physically or intellectually, to his famous ancestors, the Incas.

The Coca Leaf

According to estimates made by the Minister of Health, there is in Bolivia a yearly production of some 3,000 tons of coca leaves (Erythroxylon coca, also called the "divine plant of the Incas"). The coca leaf has an estimated cocaine content of 0.75 per cent; thus there are yearly some 23 tons of cocaine grown, shipped and sold.

Those natives who habitually chew coca leaves claim to be able to carry heavy loads for long distances without tiring. It is not surprising to see a native carrying a box of some 200 pounds. The natives also claim that the continuous use of the coca leaves improves their visual acuity, preserves their teeth, and helps them to avoid baldness; indeed, their visual acuity is often surprisingly high; few Indians show any caries at all, and it would be hard to find a bald man among the natives of the high plateau, where most of the coca is consumed. Finally, the natives claim that their well known stoicism and resignation is due to the use of coca.

Their claims are, for understandable reasons, strongly supported by the coca producers. This group recently ordered an analysis of the leaves to establish their nutritive values and succeeded in proving that the leaves contain certain amounts of vitamins A, B_1, riboflavin, pyridoxine, biotin, ascorbic acid and vitamin E. Thus the erroneous impression was created that these leaves might eventually serve as food. Unfortunately, the producers forgot to mention that the average workman at the high plateau chews some 50 Gm. of coca leaves a day, with an estimated alkaloid content of some 370 mg. Supposing that only half of this cocaine would be absorbed by the body, there would be still a daily intake of about 180 mg., an amount well above the daily allowances of the U. S. Pharmacopeia, and this amount is being ingested day after day, year after year. Many a man remains thus in a state of continuous and complete anesthesia, and it is not surprising at all to see a workman removing a foreign body from his own cornea by means of a hair without experiencing any pain whatsoever.

There is no manufacturer in this country who would extract the pure alkaloid for commercial or pharmaceutic purposes; thus the producers, who fear for their markets, insist on selling their production to the workmen, their largest consumers, besides exporting small quantities to Argentina. The situation in some of the neighboring republics, especially Peru, is almost identical.

Correspondence

DERMATITIS DUE TO MESANTOIN

To the Editor:—In an article entitled "Fulminating Dermatitis Bullosa Medicamentosa Due to 'Mesantoin'" (in The Journal, July 17, p. 1031), Dr. Dave B. Ruskin reported a fatality presumably due to "mesantoin" (methylphenylethyl hydantoin). As one who introduced this anticonvulsant drug into medicine and who has been continuously studying it clinically since 1943, I wish to comment on this report.

The exceptional dermatologic history of this patient is extremely important to an understanding of the case, and certain points are so significant that they deserve to be reviewed: 1. "At age 4 the patient had whooping cough and another unidentified illness associated with a rash." (Could this have been a drug rash?) 2. At about 6 years of age, she was given diphenyl hydantoin sodium ("dilantin") and phenobarbital, and "a rash and ataxia developed with either drug." 3. When she was approximately 7½ years of age (only six months before her fatal illness) a "rash" had developed from sulfonamide drugs given to her for acute pharyngitis.

This careful history by Dr. Ruskin clearly brings out the fact that this patient had already shown dermal sensitivity to a variety of drugs. It also emphasizes the need for observing the warning given in my interim report (as published in The Journal, Oct. 25, 1947) that the drug ("mesantoin") should be given with caution to patients who have previously had a generalized rash.

I agree with Dr. Ruskin that "this complication does not necessarily depend on the administration of a larger dose." Later experience has shown that extremely small dosages can initiate a rash in skin-sensitive patients. The severity and duration of the rash are dependent, to a large extent, on the degree of the patient's sensitivity and are not necessarily related to the amount of drug ingested.

I disagree with Dr. Ruskin that "all" patients should receive blood examinations during treatment with this drug. This implies that "mesantoin" is primarily toxic to the blood or blood-forming organs. Clinical studies show that the drug is toxic neither to the hemopoietic system nor to the derma when given in appropriate dosage to properly selected patients. It is my opinion that blood changes or skin reactions occurring singly or in combination are due to individual hypersusceptibility. Additional experience is necessary before it can definitely be determined whether severe skin reactions and marked blood changes (as in Dr. Ruskin's case) always occur together or whether serious dermal lesions can occur independently of blood changes.

For the present time, I suggest the following conservative plan of treatment which need be applied only to patients within the following groups: (1) patients giving histories of previous drug reactions, regardless of the type of reaction or nature of the drug; (2) patients having histories of generalized rash, whether due to drugs (as in Dr. Ruskin's case) or to unknown causes; (3) patients who have never taken drugs of the hydantoin or barbiturate groups, and (4) patients requiring over 9 grains (0.58 Gm.) of "mesantoin" daily.

PLAN OF TREATMENT

1. All patients in the group should be given weekly blood examinations for approximately the first sixteen weeks of treatment. To my knowledge, only 1 published case of toxicity has been manifested after this period of time (Dr. R. B. Aird's patient). 2. Not only are the blood examinations important, but these patients must also undergo repeated complete physical examinations, during this initial period of treatment, in order to detect any other early toxic manifestations. 3. This drug or any chemically related drugs should be given "in small doses and increases should be made slowly and in small increments," as suggested by Dr. Ruskin.

In the clinical investigations of "mesantoin," thousands of complete blood studies, done repeatedly on hundreds of patients by myself and many others, do not support the view of subjecting all patients to repeated blood examinations during treatment. Of course, one initial blood examination should be done routinely on all patients before beginning treatment. I am especially concerned in seeing that the facts about individual susceptibility to the drug are not confused with those relating to its therapeutic index: "Mesantoin" has relatively low toxicity, being tolerated in larger doses than either diphenylhydantoin or phenobarbital. An unfounded alarmist attitude may impede the use of a drug which has been shown to be of definite value in the control of grand mal type epilepsy by the following investigators: H. R. Carter, T. H. Harris and J. L. Otto, H. L. Kozol, W. S. Littlejohn and co-workers, K. O. Von Hagen, J. L. Fetterman, and many others. Several additional studies are being prepared for publication which, I believe, will support this opinion.

In conclusion, clinical evidence suggests that some patients exhibit an individual hypersusceptibility to "mesantoin." With proper caution, as already outlined, many of these cases can be managed satisfactorily. Dr. Ruskin should be complimented on the thoroughness of his report and for stimulating a discussion of the actions of "mesantoin" as well as placing an important reemphasis on the precautions to be taken for insuring successful therapeutic results. It should be remembered that cases of hypersusceptibility have been reported with the use of practically every active drug in the pharmacopeia.

Anthony E. Loscalzo, M.D., New York.

Medical Motion Pictures

FILM REVIEWS

Medicine in the Tropics. 16 mm., color, sound, 880 feet (1 reel), showing time twenty-five minutes. Produced in 1948 by the Lewis Sound Films for the Firestone Tire & Rubber Company. Technical adviser, K. H. Franz, M.D. Procurable on loan from: The Firestone Tire & Rubber Company, Department of Public Relations, Akron 17, or Association Films, 347 Madison Ave., New York 17.

This motion picture depicts diseases of the tropics and is based on the medical program of the Firestone plantations in Liberia. A patient is shown with the diagnosis of amebic abscess of the liver which has been made by roentgenogram, but the film is not shown. The patient is submitted to surgical treatment; however, in most cases of hepatic abscess, surgical treatment is contraindicated. A manual of tropical medicine states, "the high mortality previously associated with abscess of the liver was in a large part due to the universal use of open drainage. With the advent of emetine and the use of repeated aspiration of the cavity, the mortality has been reduced to 2 per cent." There is no mention of medical treatment for this condition in the motion picture.

Sleeping sickness is discussed and enlarged lymph nodes demonstrated. A lymph node is aspirated but the organism is not shown. The tsetse fly is mentioned but not illustrated. There are 3 cases of smallpox shown which make an excellent clinical demonstration. For medical students in the United States these smallpox cases alone make the picture worth while. A patient with elephantiasis of the scrotum is demonstrated but neither the causative agent nor the vector is shown.

This film is especially well done; it is artistic and the photography is superb. The geography of Liberia and the customs of its people are well portrayed. Natives tapping drums form a fitting introduction.

The film would be suitable for first and second year medical students and groups of nurses. The demonstration of nude patients makes it unsuited for lay audiences. The main portion of this film could be used as a basis for two separate pictures, one for the laity and one for the medical profession. For the first film simply omit the nude patients. For the medical profession some revision along the lines suggested would convert it into a valuable scientific contribution.

Nursing Care in Poliomyelitis. 16 mm., color, sound, 2,156 feet (4 reels). Produced in 1947 by The University of Illinois, Division of Services for Crippled Children, under a grant from the National Foundation for Infantile Paralysis. Procurable on loan or purchase from The University of Illinois, Division of Services for Crippled Children, 1105 South Sixth Street, Springfield.

The Acute Stage, reel I, 721 feet, showing time twenty minutes.

The nursing care of a patient in the acute stage of poliomyelitis is presented, showing the arrangement of the bed, the manner of giving hot packs, the use of pillows, sand bags, foot boards and other devices to be used in maintaining good posture in bed and the manner of changing the position of the patient when that is necessary. Other details shown are the use of the bed pan, the use of the aspirator for accumulation of mucus, special arrangements in cases of bulbar involvement and the feeding by way of a tube passed through the nose and esophagus. At times the technics become rather elaborate; nevertheless, the care with which every detail is demonstrated deserves commendation.

Treatment of Spasm, reel II, 786 feet, showing time twenty-one minutes.

Excellent illustrations of spastic activity in muscles are shown. Details of administering hot packs are demonstrated. There is an elaborate section on passive motion which is especially commendable for the painstaking detail, in which each part is exhibited. Finally, there are some views showing the use of the tub as a substitute for the hot packs.

Care of the Respirator Patient, reel III, 370 feet, showing time fifteen minutes.

This reel deals with the preparation of the respirator, the processes of introducing the patient into the respirator, the technic of using the bed pan and similar details of nursing care, the technic of catheterization and, finally, the preparations for storing the respirator. The need of testing the various parts of the respirator at regular intervals during storage to make sure that there will be no deterioration is emphasized.

The Convalescent Stage, reel IV, 379 feet, showing time eleven minutes.

This section of the film illustrates the manner of applying splints to prevent deformity, the use of a special type of pillow to permit the patient to read and work in the prone position, the use of the bed trapeze for exercise, the administration of underwater exercise in tanks, the use of balloons and bottles for respiratory exercises and the administration of various neuromuscular tests in order to assess the degree of recovery in the patient before dismissal. The closing scene shows a nurse giving instructions to the parent of a child being discharged from the hospital.

These four reels with emphasis on technic in the care of patients with poliomyelitis are well planned. They should be instructive to physicians, third and fourth year medical students, nurses and physical therapists, who may not always appreciate how elaborate the procedure must be if the patient is to have the best possible care and spared unnecessary suffering.

Photography is good to excellent.

Mother and Her Child. 16 mm., color, sound, 2,100 feet (1 reel), showing time fifty-eight minutes. Produced in 1947 for the Division of Child and Maternal Health, Department of National Health and Welfare by The National Film Board of Canada. Procurable on rental or purchase from National Film Board of Canada, 400 West Madison Street, Chicago 6.

This film is designed to show young women contemplating, or beginning pregnancy, the problems encountered in the nine months of pregnancy and in the first year of the life of the child. The problems are well chosen and their answers well given covering both obstetrics and pediatrics from the point of view of parents of a first baby. The fact that it is produced in Canada for Canadian audiences will not decrease its usefulness for United States audiences in any large degree.

There are a few weaknesses found in this production; however, they cannot be seriously criticized. In the film the father's ineptness is accepted goodnaturedly, though he could just as well be trained to be much more skilful in assisting in the care of the baby. The mixing of the orange juice with the cod liver oil is questionable, although it is successfully done in many instances.

This motion picture is well done and should be useful for showing to groups of prospective parents. Since it is rather long it might have been better to have made the film in two parts showing, first, the prenatal care and, in the second part, the delivery and the after-care of the newborn infant.

Generally speaking, the color quality of the motion picture is fair to good.

Surgery in Facial Cancer. 16 mm., color, silent, 425 feet, showing time seventeen minutes. Prepared 1936-1947 by Tibor de Cholnoky, M.D., Postgraduate Medical School and Hospital, Columbia University, New York. Procurable on loan from the author, 19 East 80th Street, New York.

This motion picture demonstrates 3 cases of recurrent facial cancer treated by electrosurgical excision, following which plastic reconstruction was carried out to correct operative defect. While the therapy of the malignant disease is well demonstrated, the results of the reconstructive procedure leave much to be desired in light of present day accepted standards. This motion picture should be of primary interest to those specializing in the radical cure of malignant disease. The photography and titles are fair to good.

The following 16 mm., color, silent, motion pictures were prepared in 1947 and are procurable on loan from Philip Thorek, M.D., 25 East Washington Street, Chicago 2.

Cervical Diverticulectomy (One Stage Operation). 530 feet, (2 reels), showing time twenty-two minutes.

This production shows the surgical technic of a one stage diverticulectomy for a large diverticulum of the cervical esophagus. The anatomy encountered in the approach to the diverticulum is well described and demonstrated, but the dissection of the neck of the diverticulum is not too clearly shown. The use of a Levin tube to locate the opening of the diverticulum and its use as a guide in closing the base to prevent a stricture is a good one. The surgical technic as a whole is commendable. The reproduced roentgenograms are not as clear or informative as they could be.

This motion picture can be recommended for surgeons who wish to review the surgery of cervical diverticulectomy and as a teaching film for medical students and house officers.

The color quality is good. There is evidence that the camera was hand held rather than supported by a tripod. There are sequences where the use of telephoto lens would have improved the film.

Total Colectomy with Ileoproctostomy for Megacolon (Hirschsprung's Disease). 760 feet, (2 reels), showing time twenty-three minutes.

The film depicts the surgical treatment of a spectacular case of congenital idiopathic dilatation of the colon. The anatomy encountered is well demonstrated, and the surgical technic as a whole is good. After division of the terminal ileum, it would have been better to cover the exposed ends of the bowel or close them before proceeding with the resection, in order to minimize contamination. The proximal end is closed with the Kerr-Parker technic after the entire colon has been freed. No attempt is made to reperitonealize the raw surface created by removal of the large bowel. An end to side ileoproctostomy may have been a better procedure than the side to side anastomosis, as complications sometime arise from the blind stump of small intestine.

The caption preceding the postoperative roentgenogram taken at nine weeks should be reedited. The roentgenogram shown does not justify the statement that the small bowel not only resembles large bowel but has assumed the position of the ascending, transverse and descending colon.

The film can be recommended for showing to groups of general surgeons, residents, interns and medical students. The photography is good; however, there is evidence that the camera is hand held rather than supported by a tripod. The field wanders on the screen, and the "panning" on the final scene of the surgical specimen is especially annoying. Color quality is excellent. The titles are clear.

Diagnosis. Danger. 16 mm., black and white, sound, 700 feet, (1 reel), showing time twenty-seven minutes. *Prepared by* Don C. Hawkins, Assistant Secretary, St. Paul Mercury Indemnity Company, with the cooperation of Malcolm T. MacEachern, Director, American College of Surgeons, Chicago. Produced in 1947 by the Chicago Film Studios, Chicago. Procurable on loan from: St. Paul Fire and Marine Insurance Company, 111 West Fifth Street, St. Paul 2.

This motion picture is designed to eliminate unsafe conditions occurring within the hospital. It shows the danger of inadequate equipment in the various departments of the hospital, such as slipping on wax floors, worn out electric cords, the serving of food on chipped dishes, hot water bottle burns, the dispensing and administration of incorrect drugs and many other similar hazards which may result in harm to the patients, visitors or personnel.

The production, somewhat overdone, is suitable for showing to hospital personnel but is not recommended for lay groups. The photography is good.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Board May Revoke License Only on Substantial Evidence. — The defendant was licensed to practice medicine in Pennsylvania in 1910. He left the state in 1913 but returned to Pennsylvania in 1932 and continued the practice of medicine there until 1944, when the plaintiff, State Board of Education and Licensure, issued a citation against him alleging that he had obtained his medical license through fraud, misrepresentation and deception. The defendant filed a bill in equity to enjoin the board from proceeding with a hearing on such citation on the ground that it was without authority and that it was guilty of laches in permitting thirty-four years to elapse before the issuance of the citation. The court dismissed the bill, and on appeal to the Supreme Court the action of the court below was affirmed. Thereafter the board, following due hearing on the merits, revoked the defendant's license. This order of revocation was affirmed by the court of common pleas of Dauphin County; the defendant then appealed to the Supreme Court of Pennsylvania.

The defendant's license was issued pursuant to the act of May 18, 1893, as amended by the act of April 27, 1909. It is admitted that he received the degree of Doctor of Medicine from the Maryland Medical College on May 3, 1906, and that he successfully passed the appropriate medical examination given in 1910 by the Medical Council of Pennsylvania, the predecessor of the plaintiff board. The sole charge, said the Supreme Court, is that he presented fraudulent credentials to induce the Medical Council in 1910 to issue a license to him.

The plaintiff alleged that the fraud of the defendant in obtaining a license to practice in Pennsylvania consisted of (1) submitting to the Medical Council of Pennsylvania in support of his application for medical licensure a certificate of medical education which was not signed by the then Dean of the Maryland Medical College and (2) submitting to the Medical Council of Pennsylvania a sworn application for licensure to practice medicine which contained false statements that he had studied medicine four years and that he attended the University of Maryland during the year 1902-1903.

The defendant first argued that because thirty-four years elapsed between the granting of his license and the issuance of the citation in 1944, the doctrine of laches should prohibit the board from revoking his license. With this contention, said the Supreme Court, we cannot agree. Laches cannot be imputed by the mere passage of time, but must be determined from all the circumstances of the case. The Supreme Court of the United States has said: "But length of time necessarily obscures all human evidence; and as it thus removes from the parties all the immediate means to verify the nature of the original transactions, it operates by way of presumption, in favor of innocence, and against imputation of fraud." This rule, continued the Pennsylvania Supreme Court, is of particular significance in this case. One of the board's own witnesses testified that most of the academic records of the Maryland Medical College had been destroyed by fire prior to 1944. In addition, a letter, dated March 15, 1911, from W. S. Smith, M.D., the then Dean of the Maryland Medical College to Miss Mary M. McReynolds, clerk of the Medical Council of Pennsylvania, establishes that within eight months of the defendant's licensure an investigation was made of his credentials. As no action was then undertaken to revoke his medical license, the only reasonable deduction possible is that the credentials were found to be authentic and satisfactory at that time. Thirty-four years later we cannot reasonably expect verification of them with the same degree of certainty that was present then.

The defendant then contended that the evidence on which the board acted was legally insufficient. The Administrative Agency Law of Pennsylvania provides, among other things, that on appeal to the courts an agency's adjudication must be affirmed, unless "any finding of fact made by the agency and necessary to support its adjudication is not supported by substantial evidence." Substantial evidence, said the Supreme Court, is more than a mere scintilla; it means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion; it must do more than create a suspicion of the existence of the fact to be established.

With this principle in mind, the Supreme Court continued, it is necessary to consider the evidence on which the plaintiff predicated its finding that the defendant committed fraud in submitting a "Certificate of Medical Education" which purported to be signed by the Dean of the Maryland Medical College. The certificate received by the Medical Council is dated June 2, 1910, and at the end thereof is signed in ink: "Maryland Medical College, C. B. Smith, Dean." The plaintiff's evidence tended to prove that one W. S. Smith was actually Dean in 1910. Even assuming that W. S. Smith was Dean, said the Supreme Court, the alleged fraud of the defendant was not established. If the signature "C. B. Smith, Dean" was not the name or the signature of the then Dean, there still remains the vital question, by whom and at whose direction was the incorrect signature affixed to the certificate? There was no evidence that the questioned document ever passed through the defendant's hands, but it was admitted by the plaintiff's witnesses that it could have been mailed directly from the Maryland Medical College at Baltimore to the Medical Council at Harrisburg. At most the evidence presented by the plaintiff might arouse suspicion, but, concluded the court, it is clearly insufficient to prove the allegation of fraud.

The next question considered was whether or not there was substantial evidence that the defendant committed fraud in submitting a sworn application for licensure which stated that he had studied medicine for four years and that he had attended the University of Maryland during the academic year 1902-1903. The printed catalogue of the School of Medicine of the University of Maryland for the season 1903-1904 does not mention the defendant as a member of the class of 1902-1903; that for the session 1904-1905 lists him as a member of the first year class in 1903-1904, and that for the year 1905-1906 lists him as a member of the second year class in 1904-1905. These catalogues, said the Supreme Court, were not offered in evidence, and no witness was presented to testify to their accuracy. They have little probative value, inasmuch as they were not official school records and the listing of the various students attending the sessions could be incorrect, because of, among other things, the carelessness of those preparing the catalogues for publication or errors of the printer. The plaintiff also offered two matriculation cards from the University of Maryland bearing the defendant's name. The one, dated Sept. 14, 1903, had several unfilled blanks, one of which followed the question "What Medical Courses have you taken and at what college?" The other card, dated Oct. 3, 1904, had, in answer to the same question: "One year University of Md." When the defendant received his degree of Doctor of Medicine from the Maryland Medical College in 1906, that school required a four year medical course for graduation and, therefore, it is a reasonable inference that when he was admitted to senior status in 1905 he established to the satisfaction of the school authorities the record of his first three years in other medical schools. We are convinced, said the Supreme Court, that this negative evidence is no proof that the defendant did not attend the University for the year 1902-1903, as he claims. At most, such evidence is but a mere scintilla, and is insufficient to overcome the presumption in favor of the defendant's innocence.

We have most carefully examined the entire record, said the Supreme Court, and have concluded that the weak and inconclusive evidence adduced by the plaintiff does not rebut the presumption of innocence and that the alleged fraud has not been proved. On the evidence presented, it would be grossly unjust to revoke the defendant's license to practice his chosen profession and thereby deprive him of his means of livelihood.

Accordingly the order of revocation entered by the State Board of Medical Education and Licensure was reversed and the board was directed to reinstate the license of the defendant to practice medicine in Pennsylvania.—*Pennsylvania State Board of Medical Education and Licensure v. Schireson, 61 A. (2d) 343 (Pa., 1948).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I & II.* Various Centers, Feb., June and Sept. 1949. *Part II.* April, 1949. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2, Pa.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc.: *Written.* July 15. Various locations. Final date for filing application is April 15. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Avenue, New York 27.

American Board of Internal Medicine. *Oral.* San Francisco, Feb. 8-10, 1949. New York City, March 23-25. Final date for filing application is Jan. 2. Philadelphia, June 1-3. Final date for filing application is Jan. 2. *Written.* Oct. 17, 1949. Final date for filing application is May 1. Asst. Sec.-Treas., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 1949. Final date for filing application is Jan. 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn

American Board of Ophthalmology: *Written.* Jan. 14. *Oral.* San Francisco, March 21-24; New York, June 11-15; St. Louis, Oct. 15-19; Boston, Dec. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Obstetrics and Gynecology, Inc.: *Oral.* Chicago, May 8-14. Final date for filing application is April 1. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsurgh 6.

American Board of Orthopedic Surgery. *Part I.* Various Centers, April and May. Final date for filing application is Dec. 31. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Otolaryngology: New York, May 11-14; Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Boston, April. Final date for filing application is March 1. Sec., Dr. Robert A. Moore, 507 S. Euclid Ave., St. Louis 10, Mo.

American Board of Pediatrics: St. Louis, Feb. 18-20. Baltimore, April 22-24. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Rd., Rosemont, Pa.

American Board of Physical Medicine: Atlantic City, June 4-5. Final date for filing application is March 15. Sec., Dr. R. L. Bennett, Georgia Warm Springs Foundation, Warm Springs, Ga.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Psychiatry and Neurology: *Oral.* May. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March 1949. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 28-30, 1949. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

Alaska:* Juneau, March 1. Sec.-Treas., Dr. W. M. Whitehead, Box 140, Juneau.

Arkansas:* Little Rock, June 9-10. Sec., Dr. L. J. Kosminsky, Texarkana.

Colorado:* Denver, Jan. 4-7. Final date for filing application is Dec. 18. Sec.-Treas., Dr. W. W. King, 831 Republic Bldg., Denver 2.

Connecticut:* Hartford, March 8-9. Secretary to the Board, Dr. Creighton Barker, 258 Church Street, New Haven.

Delaware: *Examination.* Dover, Jan. 11-13. *Endorsement.* Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia:* *Reciprocity.* Washington, Dec. 13. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg. East, Washington.

Georgia: *Examination.* June, Atlanta and Augusta. *Reciprocity.* Atlanta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O. San Francisco, Calif.

Hawaii: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 10-12. Dir., Bureau of Occupational Licenses, Miss Estella S. Mulliner, State House, Boise.

Illinois: Chicago, Jan. 11-13. Superintendent of Registration, Mr. Fred W. Ruegg, State House, Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

Kansas: Topeka, Dec. 15-16. Sec., Board of Medical Registration & Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 13-15. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville 2.

Louisiana: *Examination.* New Orleans, Dec. Sec.-Treas., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12. *Homeopathic Examination.* Baton Rouge, subject to call. Sec., Dr. F. H. Hardenstein, 715 Pere Marquette Bldg., New Orleans.

Maine: Portland, March 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Maryland: *Examination.* Baltimore, Dec. 14-17. *Endorsement.* At the discretion of the Board. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore.

Massachusetts: *Examination.* Boston, March 8-11. Sec., Dr. George L. Schadt, 413 E. State House, Boston.

Minnesota:* Minneapolis, Jan. 18-20. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Building, St. Paul.

Montana: Helena, April 4-6. Sec., Dr. O. G. Klein, First National Bank Building, Helena.

Nebraska:* *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Building, Lincoln 9.

Nevada: Carson City, May 2. Sec., Dr. G. H. Ross, 112 N. Curry Street, Carson City.

New Hampshire: Concord, March 10. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, June 21-24. Sec., Dr. E. H. Hallinger, 28 West State Street, Trenton 8.

New Mexico: Santa Fe, April 11-12. Sec., Dr. V. E. Berchtold, 141 Palace Ave., Santa Fe.

New York: *Examination.* Various Centers, Feb. 1-4. Sec., Dr. J. L. Lochner, Jr., 23 S. Pearl St., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 17. Sec., Dr. Ivan M. Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-7. Act. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination* Columbus, Dec. 13-15. Sec., Dr. H. M. Platter, 21 W Broad St., Columbus.

Oregon:* *Examination.* Jan. 5-7. Final date for filing application is Dec. 22, 1948. *Endorsement.* Jan. 21-22. Final date for filing application is Jan. 3. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, Jan., 1949. Act. Sec., Mrs M. G Steiner, 351 Education Bldg., Harrisburg.

Puerto Rico: *Examination.* Santurce, March 1. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

Rhode Island:* *Examination.* Providence, Jan. 6-7. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

South Dakota:* Pierre, Jan. 18-19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

Tennessee:* *Examination.* Memphis, Dec. 22-23. Sec., Dr. H. W. Qualls, 1635 Exchange Building, Memphis 3.

Texas: *Examination.* Austin, June 16-18. Sec., Dr. M. H. Crabb, 209 Medical Arts Bldg., Fort Worth 2.

Utah: *Examination.* Salt Lake City, July. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Vermont: *Examination.* Burlington, Feb. Sec., Dr. F. J. Lawliss, Richford.

Washington:* Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

West Virginia: Charleston, Jan. 3-5. Sec., Public Health Council, Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

Wisconsin:* Madison, Jan. 11-13, 1949. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls, Wis.

Wyoming: *Examination.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alasea: Juneau, Feb. 21-26. Sec.-Treas., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Dec. 21. Sec., Mr. Francis A. Roy, University of Arizona, Tucson.

Connecticut: New Haven, Feb. 12. Exec. Asst., State Board of Healing Arts, Miss Mary G. Reynolds, 110 Whitney Ave., New Haven 10.

District of Columbia: *Examination.* Washington, April 18-19. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg., East, Washington.

Florida: *Examination.* Gainesville, June 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Iowa: *Examination.* Des Moines, Jan. 11. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor & Detroit, Jan. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Jan. 4-5, April, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

Oklahoma: Spring of 1949. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. Sec., Basic Science Examining Committee, Dr. C. D. Byrne, Univ. of Oregon, Eugene.

Rhode Island: *Examination.* Providence, Feb. 9. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Stattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

48:1-132 (July) 1948. **Partial Index**

Comparative Study of Tellurite Plating Media for Corynebacterium Diphtheriae. M. Frobisher Jr., Elizabeth I. Parsons, Elsie Lankford Yeates and Kathleen L. Gay.—p. 1.
Infection and Immunization of Laboratory Animals with Rickettsia Prowazekii of Reduced Pathogenicity, Strain E. F. P. Gallardo and J. P. Fox.—p. 6.
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Titration of Mumps Neutralizing Antibody in Chick Embryos. G. R. Leymaster and T. G. Ward.—p. 45.
Susceptibility of Mongoloids to Infection. M. Siegel.—p. 53.
In Vitro Action of Immune Serums on Cercariae of Schistosoma Mansoni. B. Papirmeister and F. B. Bang.—p. 74.
Immunization of Young Mice with Unmodified M M Mouse Encephalomyelitis Virus Under Passive Protection from Immune Mothers. F. J. Curley and J. E. Gordon.—p. 81.
Poliomyelitis in Uninoculated Rhesus Monkey, and in Orally Inoculated Monkeys, Receiving Desoxypyridoxine. D. Bodian.—p. 87.
Comparative Susceptibility of Cynomolgus and Other Monkey Species to Poliomyelitis Virus by Intracerebral and Oral Routes. J. L. Melnick and H. von Magnus.—p. 107.
*Tonsillectomy in Experimental Poliomyelitis. H. von Magnus and J. L. Melnick.—p. 113.
Factors Affecting Survival of Treponema Pallidum in Vitro. R. A. Nelson Jr.—p. 120.

Tonsillectomy in Experimental Poliomyelitis.—Von Magnus and Melnick demonstrated that after tonsillectomy cynomolgus monkeys are more susceptible to infection after being fed poliomyelitis virus than rhesus monkeys and African green monkeys. The incidence of poliomyelitis in tonsillectomized cynomolgus monkeys increased to 93 per cent (13 positive of 14 fed virus) from a control level of 13 per cent (2 of 15) for the nontonsillectomized cynomolgus groups. The incidence in the other tonsillectomized species of 8 per cent was no different from the incidence of 8 per cent in nontonsillectomized controls of these species. Two of 3 cynomolgus monkeys which contracted poliomyelitis were found to excrete virus with their stools the day before paralysis. Five nonparalyzed monkeys did not excrete virus in the four week observation period. Of 14 tonsillectomized monkeys which subsequently contracted poliomyelitis, only 2 had the bulbar form of the disease. Two other monkeys exhibited facial paralysis together with paralysis of the limbs.

American Journal of Psychiatry, New York

104:513-592 (March) 1948. **Partial Index**

Limitations of Psychiatry. A. Gregg.—p. 513.
The Myth of Psychopathic Personality. B. Karpman.—p. 523.
Neuropsychiatrist and Civil Law. H. L. Kozol.—p. 535.
New Facts on Prognosis in Mental Disease. R. H. Israel and N. A. Johnson.—p. 540.
What Happens to First Admissions to State Hospitals. H. Meyer and G. H. Preston.—p. 546.
Psychiatric Treatment of Veteran Outpatient. J. Hughes and B. E. McLaughlin.—p. 549.
Problems of Social Psychiatry in Palestine. K. Blumenthal.—p. 563.
Outpatient Treatment of Alcoholics. L. E. Wexberg.—p. 569.
Indications for Shock Treatment in Psychiatry. T. Braatoy.—p. 573.
*Acute Alcoholism in Mental Patients Treated with Insulin. S. J. Tillim. —p. 576.

Alcoholism in Mental Patients Treated with Insulin.—Tillim says that when alcoholic addicts are admitted to hospitals they either are intoxicated or present the after-effects thereof, involving psychic, nervous and nutritional disorders. Patients may exhibit psychic clouding to the point of delirium with delusions and hallucinations, nervousness displayed in tremor, ataxia and restlessness, and nutritional defects manifested by dehydration, refusal or inability to accept nourishment, and signs of avitaminosis. Therapeutic indications are for prompt induction of rest and sleep and measures to correct the nutritional deficiency. Insulin-induced hypoglycemic reactions are preeminently effective in providing the rest and sleep and conditioning the patient for the acceptance of nourishment without recourse to force or parenteral administration. Favorable results from the use of insulin in the medical treatment of alcoholism have been reported by others. The author presents 7 cases which provide additional evidence on the efficacy of insulin therapy. He concludes that this method is the quickest for restoration of normal mentation and physical health and more specific in purpose than any other method presently in vogue.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

60:1-152 (July) 1948

Micro-Arteriography. A. E. Barclay.—p. 1.
Roentgen Diagnosis of Diffuse Leukemic Infiltration of Kidneys in Children. J. F. Gowdey and E. B. D. Neuhauser.—p. 13.
*Laryngeal Chondronecrosis Following Roentgen Therapy. W. A. Goodrich and M. Lenz.—p. 22.
Roentgen Treatment for Extensive Epithelioma of Larynx: Results in 139 Cases. A. U. Desjardins, F. A. Figi and L. M. Vaughan.—p. 29.
Roentgen Therapy of Malignant Tumors of Testis. E. T. Leddy.—p. 39.
*Preliminary Report on Clinical Use of Radioactive Iodine (I^{131}). E. R. Miller, M. H. Soley and M. E. Dailey.—p. 45.
Roentgenographic Studies of Methylmethacrylate (Lucite) Plombage in Extrapleural Pneumolysis. H. D. Kerman.—p. 51.
Primary Cancer of Lung with Special Reference to Apical Lung Tumors. J. J. Stein.—p. 58.
Esophageal Hiatus Hernia with Inversion of Stomach. J. H. Marks. —p. 63.
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Gastric Retention and Gastric Ulcer. F. Huber and C. G. Huntington. —p. 80.
Gallstone Ileus Associated with Diverticulitis of Colon: Case Report. I. I. Lomhoff and J. Dubowy.—p. 86.
Suggested Outline for Training of Radiologists at Qualified United States Naval Hospitals. W. G. Scott.—p. 90.
Tribute to Wilhelm Conrad Röntgen. G. E. Gomez.—p. 96.

Laryngeal Chondronecrosis Following Roentgen Therapy.—Goodrich and Lenz say that chondronecrosis of the larynx after roentgen therapy for laryngeal cancer is precipitated by infection of cartilage. Laryngeal chondronecrosis following roentgen therapy for cancer of the larynx occurred in 28 of 205 patients treated at the Presbyterian Hospital, New York, between 1932 and 1946. Eight of the 28 have been found to be free of cancer. In most of the others, it was not possible to determine whether cancer persisted microscopically or whether one was dealing only with radionecrosis. In 23 of the 28 chondronecrosis appeared within six months, 2 within one year and 3 more than one year after treatment; the latter 3 recovered, 1 after sloughing, 1 after local removal of the necrotic portion of the epiglottis and 1 after laryngectomy. Laryngeal chondronecrosis occurred chiefly in advanced and extensive carcinomas and exceptionally in those which were early and small. Chondronecrosis involved the epiglottis more frequently than other laryngeal cartilages. When developing in its free portion prognosis was good, as nearly every cured case of epiglottic carcinoma showed a deformity of the healed radionecrotic area. Prognosis was poor when necrosis extended to the base of the epiglottis or the preepiglottic space. The outlook was also poor when the arytenoids or thyroid cartilages were involved. Laryngofissure or partial laryngectomy either before or after roentgen therapy seemed to favor the development of chondronecrosis in the remaining cartilage. The exception to this was the removal of the necrotic free portion of the epiglottis. Total removal of cartilage by laryngectomy avoided this complication. The use of penicillin and sulfonamide drugs seemed to help abort the threat of chondronecrosis, but was less effective when chondronecrosis had fully developed. Laryngectomy should be considered in selected cases with early or impending chondronecrosis.

Use of Radioactive Iodine (I^{131}).—According to Miller and his co-workers radioiodine is capable of spontaneously disintegrating and emitting radiation, either beta particles or beta particles and gamma rays. It is useful in therapy since this radiation may destroy the cells which absorb the iodine, and useful in tracer work since it allows one to follow the fate and metabolism of the iodine by observing the radiations emitted from it. There is no difference in the metabolism of radioactive and nonradioactive iodine. However, there are eleven different radioactive isotopes of iodine which differ enough in radiation action so that they might well be considered as different substances. This is true because the different isotopes have great differences in their half-lives and their radiations have different energies. This is well reflected in the case of I^{130} and I^{131}. The half-life of I^{130} is 12.6 hours and that of I^{131} is eight days. Therefore, I^{130} will act with great effect over a short time and I^{131} will act with less effect per unit time, but will act over a long time. This will make a great difference—as much as fifty times—in the dose administered to accomplish the same end. Radioiodine is useful in the treatment of Graves' disease in which the thyroid is not saturated with iodine. It is not useful in the therapy of Graves' disease in which the thyroid is saturated with iodine, nor is it useful in the treatment of thyroiditis, nontoxic goiter or involutionary nodules in the thyroid. It is occasionally useful in therapy of carcinoma. The studies described here were made in order to determine the uptake of radioiodine in microcuries in the human thyroid in situ after oral administration of I^{131}. From this an estimate of the energy dissipated within the thyroid can be made. The iodine solution is put into about 50 cc. of water, and the patient drinks the entire solution. The iodine is administered in the evening and measurements are made on the patients during the following two days during the daytime. Follow-up measurements are made at one and two week intervals. The patients are reevaluated clinically and with laboratory tests at the end of a month to determine their status and possible need for more treatment. The measurements are made with the Geiger counter. The authors stress the need of caution in the handling of radioactive materials, since all of them are dangerous.

American Journal of Surgery, New York

76:121-232 (Aug.) 1948

Technic for Resection of Right Middle and Right Lower Lobes of Lung. R. C. Scanneli.—p. 124.
Four Hundred Consecutive Cases of Jaundice. C. A. Bachhuber and A. E. Gilbert.—p. 144.
Reversal of Circulation of Brain: Partial Reversal in Four Humans Treated for Paralysis and Mental Conditions. G. H. Sciaroni.—p. 150.
Development of Ultraviolet Blood Irradiation. E. K. Knott.—p. 165.
Gastric Diverticula. M. A. Casberg and W. P. Martin.—p. 172.
Hemorrhagic Shock. C. M. Swindler.—p. 182.
Meckel's Diverticulum. A. V. Migliaccio and C. Begg.—p. 188.
Percutaneous Fixation of Hip Fractures. C. B. Strauch.—p. 197.
Transitory Hypoproteinemia in Acute Severe Fractures. B. J. Ficarra.—p. 201.

Am. J. Syphilis, Gonorrhea and Ven. Dis. St. Louis

32:301-408 (July) 1948

*Laboratory Diagnosis of Granuloma Inguinale and Studies on Cultivation of Donovan Body. R. B. Dienst.—p. 301.
Radioactive Tracer Technics and Their Possible Application to Studies in Syphilis. P. D. Rosahn.—p. 307.
Therapeutic Efficacy of Sodium Penicillin and of Penicillins F and X in Experimental Rabbit Syphilis. P. D. Rosahn, B. Gueft and Catharine L. Rowe.—p. 317.
Experimental Mouse Syphilis I. Organ Distribution of Infectious Agent. P. D. Rosahn, B. Gueft and Catharine L. Rowe.—p. 327.
Plasma and Cerebrospinal Fluid Iron Concentration Studies in Syphilitic and Nonsyphilitic Patients. R. L. Greif.—p. 337.
Extragenital Chancres: Survey of 219 Cases. H. A. Tucker and J. L. Mulherin.—p. 345.
False Positive Serologic Tests for Syphilis Following Smallpox Vaccination. T. Rosenthal and D. Widelock.—p. 365.
Kahn "Optimal Zone Reaction" in Seronegative Cases of Neurosyphilis. D. Boersma and Phebe G. Williams.—p. 370.
Cardiolipin Slide Test in Serodiagnosis of Syphilis. S. J. Klein and G. M. Leiby.—p. 377.
Further Observations of Electrocardiographic Changes in Early Syphilis. H. P. Steiger and J. Edeiken.—p. 391.
Treatment of Neurosyphilis with Penicillin Alone. B. Dattner.—p. 399.

Diagnosis of Granuloma Inguinale.—According to Dienst and his collaborators the simplest and most reliable laboratory procedure for diagnosis of granuloma inguinale is to determine the presence of intramonocytic Donovan bodies in the tissue smear stained by Wright's stain. After directing attention to Anderson's report in 1943 on the cultivation of Donovan bodies in the yolk sac of the chick embryo, Dienst says that he and his collaborators have been successful in growing the organisms in fresh unincubated yolk medium. The Donovan bodies multiplied in yolk medium prepared from unfertile as well as from fertile eggs. The ability of the plain yolk medium to support the growth of Donovan bodies of a freshly isolated strain depended on a physical property of the medium. The author describes the preparation of the medium to cultivate Donovan bodies. Addition of a small percentage of agar to fresh yolk medium furnishes a factor essential for cultivation in vitro of recently isolated strains of Donovan bodies.

Annals of Otol., Rhin. and Laryngology, St. Louis

57:287-576 (June) 1948

Aliphatic Versus Aromatic Amines as Vasoconstrictors. K. K. Chen.—p. 287.
Neuron Arcs of Clinical Significance in Laryngology. A. C. Furstenberg and Elizabeth Crosby.—p. 298.
Discussion of Present Methods for Testing Auditory Function. M. F. Jones.—p. 311.
Volume of Bronchial Tree at Various Levels and Its Possible Physiologic Significance. A. C. Hilding and D. Hilding.—p. 324.
Problems of Diagnosis in Obstruction of Eustachian Tube. F. T. Hill.—p. 343.
Tonsillectomy in United States. L. R. Boies.—p. 352.
Etiology, Treatment and Prevention of Chronic Sinus Infection. S. J. Crowe and J. E. Lett.—p. 364.
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Cancer of Larynx: Statistical Study. L. A. Schall and J. J. Ayash.—p. 377.
Skull Roentgenograms of Interest to Otolaryngologist. F. H. McGovern, G. S. FitzHugh and G. Cooper Jr.—p. 387.
*Indications for and End Results of Fenestration Surgery. A. L. Juers and G. E. Shambaugh.—p. 397.
*Rhinoscleroma Apparently Cured with Streptomycin. G. B. New, L. A. Weed, D. R. Nichols and K. D. Devine.—p. 412.
Effects of Negative Air Pressure in Middle Ear. E. G. Wever, M. Lawrence and K. R. Smith.—p. 418.
Carcinoma of Trachea. C. W. Engler.—p. 429.
Testing Speech-Hearing and Efficiency of Hearing Aids. D. Macfarlan.—p. 444.
*Lermoyez's Syndrome—Allergic Disease. W. W. Eagle.—p. 453.
Incidence of Otitis Media and Mastoiditis in Scarlet Fever. M. J. Fox and Veronica L. Minning.—p. 489.
Hearing Aids: Evaluation and Practicability of Hearing Aids, with Review of Recent Literature. G. Berry.—p. 500.

Results of Fenestration Surgery.—Juers and Shambaugh say that after a diagnosis of clinical otosclerosis has been made and routine hearing tests completed, they classify the case as to suitability into one of three groups. Cases are classified as belonging to a class A when there is satisfactory cochlear function as determined by bone conduction audiometry with no level for the 512, 1,024 or 2,048 frequencies below 30 decibels. The Rinne tests with the 256, 512 and 1,024 frequency forks are negative. The Schwabach tests for these forks show a normal or slightly prolonged time as compared to a normal ear. The air conduction curve may be fairly flat or have a slightly better threshold for the high than the low tones. In class B patients the bone conduction audiometric test will show the threshold for one level — usually 2,048 — to be below 30 decibels. The fork tests will be similar to those in class A except that with the 1,024 frequency fork air conduction may be equal to bone conduction and for 2,048 the Schwabach test will usually show a slightly greater degree of impairment. In class C cases the audiometric bone conduction threshold is below the 30 decibel level usually for two of the three speech frequencies. For the 1,024 frequency fork the Rinne reaction is as a rule positive. The Schwabach tests for the 1,024 and 2,048 frequencies are both definitely shortened. The air conduction curve almost always shows more loss for the high than for the low tones. The authors found that in class A patients a fenestration can produce in approximately 75 to 80 per cent of the cases what may be considered a stable level of hearing which is equal to or better than that obtainable by a hearing aid. If there is some associated nerve degeneration and the case comes within class B, the patient has a 40 to 60 per cent chance of attaining a good result, and a class C patient would have a 10 to 20 per cent chance. Class C patients and some class B patients who wear a hearing aid well should be advised not to consider surgical treatment. A two year follow-up indicates that the incidence of complete physiologic closure is 1.4 per cent in patients who at the time of their best hearing improvement had attained a level of 35 decibels or better.

Streptomycin in Rhinoscleroma.—New and his associates report the case of a woman, aged 32, who had been born in Siberia and reared in the Far East. Her chief complaint was bilateral nasal obstruction for fifteen years with hoarseness, a sense of constriction in her throat and slight difficulty in swallowing for one year. A diagnosis of rhinoscleroma had been made in 1938 in Shanghai, China. Treatment with autogenous vaccine apparently arrested the disease process except for a short period in 1941, when there was reactivation. On examination in 1946, both nostrils were found to be almost completely obstructed with granulomatous tissue. There was scarring of the pharynx, with a small opening into the nasopharynx. The posterior surface of the epiglottis and the left side of the larynx were involved with granulomatous masses, Tomographs of the larynx showed almost complete obstruction of the airway at the level of the glottis. Culture of the granulomatous material showed large numbers of Klebsiella. Since organisms of the Klebsiella group had been found sensitive to streptomycin, treatment with streptomycin was begun on Sept. 27, 1946. The patient received 250 mg. of streptomycin intramuscularly every three hours. After the first week the antibiotic was discontinued because of articular pains, a cutaneous rash, malaise and fever. After twelve days' rest it was possible to continue the administration of streptomycin for forty-three consecutive days, or until a total of 97.25 Gm. had been given. After 38 Gm. of streptomycin had been administered, the patient stated that there was only one third as much mucopurulent material and crusting in her nose as there had been before treatment. After 53 Gm. had been used, tomographs of the larynx showed a good airway. The results of culture of tissue removed from the nostrils were negative for Klebsiella. Approximately eight months after the cessation of treatment with streptomycin, examination of the larynx showed no evidence of the disease other than the residual scarring, and the results of culture of tissue removed from the larynx were negative for Klebsiella. This seems to be the first case of rhinoscleroma cured with streptomycin.

Lermoyez's Syndrome — An Allergic Disease. — Eagle directs attention to the fact that in Ménière's and Lermoyez's syndromes the same symptoms are encountered, but their appearance is in reverse order. In Ménière's syndrome the tinnitus and deafness follow a vertiginous attack and remain stationary or become progressively worse, while in Lermoyez's syndrome the tinnitus and deafness precede the vertigo and diminish or completely subside immediately after the vertigo becomes established. Lermoyez attributed his syndrome to a vasospasm of the internal auditory artery without any suggestion of an allergic origin. The author observed 11 patients who demonstrated the typical symptoms of Lermoyez's syndrome, but in each instance an allergic disturbance was found, generally that of urticaria (usually the giant type) sometime prior to the onset of symptoms. The syndrome is believed to be allergic in origin and urticaria probably the necessary etiologic factor. The author presents the histories of 3 of 11 patients with Lermoyez's syndrome observed by him. He emphasizes that in view of the excellent prognosis of Lermoyez's syndrome, compared to Ménière's syndrome, it is essential that Lermoyez's syndrome be recognized when it exists.

Bulletin New York Academy of Medicine, New York

24:481-546 (Aug.) 1948

Modern Treatment of Pulmonary Suppuration. W. D. Andrus.—p. 481.
Medical Aspects of Thrombophlebitis. E. V. Allen.—p. 491.
*Some Preliminary Observations on Clinical Course of Myasthenia Gravis Before and After Thymectomy. A. M. Harvey.—p. 505.
Influence of Disease on History. G. T. Pack and Frances R. Grant. —p. 523.

Myasthenia Gravis.—Harvey says that his analysis of 125 patients with myasthenia gravis suggests that if significant clinical remissions appear they tend to occur early in the course of the disease. Significant remissions which last for a long period of time appear to be unusual in patients who have received moderate or large amounts of neostigmine for more than six months. Sufficient data are not yet available to evaluate with finality the effect of thymectomy on the course of myasthenia gravis. Preliminary studies indicate that the beneficial results are greater than one might expect from spontaneous remission. This conclusion is further supported by the following: that most of the patients operated on had severe myasthenia, that there had been no tendency for the development of remissions preoperatively and that large doses of neostigmine had been administered in the preoperative period and had to be continued for many weeks after operation. It is not known what role the thymus plays in the pathogenesis of myasthenia gravis, but the author thinks that long term study of the effect of thymectomy early in the course of myasthenia gravis before prolonged therapy with neostigmine may reveal information of importance concerning the physiologic function of the thymus. The magnitude of this type of clinical experiment is evident when one realizes that spontaneous remission may occasionally last for fifteen years.

Florida Medical Association Journal, Jacksonville

35:65-124 (Aug.) 1948

Ophthalmoscopic Observations in Hypertension and Their Import. S. Richardson.—p. 79.
Dicumarol in Acute Myocardial Infaction: Its Use in Small Controlled Series. H. Fuller.—p. 85.
Health Center Buildings. H. E. Handley.—p. 88.
Liver Function Tests. J. P. Rowell.—p. 92.

Gastroenterology, Baltimore

11:1-156 (July) 1948

*Chronic Relapsing Pancreatitis: Analysis of 27 Cases Associated with Disease of Biliary Tract. E. E. Gambill, M. W. Comfort and A. H. Baggenstoss.—p. 1.
*Treatment of Non-Specific Ulcerative Colitis by Autogenous Vaccine; Correlated Bacteriological and Immunological Studies. A. Maratka and V. Wagner.—p. 34.
Hypoproteinemia and Edema in Course of Tropical Sprue. M. Stefanini. —p. 50.
Improved Liver Biopsy Needle. W. L. Voegtlin.—p. 56.
Diverticula of Stomach: Report of 26 New Cases. S. P. Bralow and M. A. Spellberg.—p. 59.
Response of Human Intestinal Motility to Tetraethyl Ammonium Chloride. E. L. Posey Jr., H. S. Brown and J. A. Bargen.—p. 83.
Incidence of Cholelithiasis in Negro as Compared with White. W. H. Windley.—p. 90.
Needle Biopsy of Liver: II. Experiences with Malignant Neoplasm. S. A. Safdi, E. A. Gall, C. W. Kumpe and L. Schiff.—p. 93.
Absorption, Destruction, and Excretion of Orally Administered Thiamin by Human Subjects. T. E. Friedemann, T. C. Kmieciak, Patricia K. Keegan and Bernice Blum Sheft.—p. 100.
Study on Occurrence of Pneumoperitoneum After Gastroscopy and Observance of Interstital Emphysema of Stomach. J. Myhre and J. A. Wilson.—p. 115.

Chronic Relapsing Pancreatitis. — Gambill and his co-workers report on 27 patients, 19 men and 8 women, between the ages of 10 and 75 years, with chronic relapsing pancreatitis associated with disease of the biliary tract. Painful seizure was the most typical, violent and arresting manifestation of the disease. In 3 of the 27 cases pain was relatively mild, moderate in 1 case and severe in 23 cases. Pain occurred as infrequently as once every four years and as often as once daily or weekly. In 14 patients there was a progressive increase in the frequency of attacks. Painful seizures lasted for one hour to twenty-one days; the duration of pain for days, not for hours, is a characteristic that might point to pancreatitis. Nausea, vomiting and jaundice were associated with the painful seizures of pancreatitis. Most of the patients exhibited evidence of loss of weight. In 26 of the 27 cases one or more surgical procedures were carried out on the biliary tract. Cholecystectomy or cholecystectomy plus choledochostomy was followed by remission of painful attacks of one to eight years' duration in about one third of the cases and of four or more years in about one fifth of the cases, a percentage high enough to justify this approach. The problems of diagnosis of chronic relapsing pancreatitis are increased by the presence of associated disease of the biliary tract; awareness of the possibility of pancreatitis, familiarity with its clinical features, roentgenologic observations and tests of pancreatic function should lead to a correct diagnosis in a high percentage of cases. Comparison of the 27 cases of this series with 29 cases of chronic relapsing pancreatitis not associated with disease of the biliary tract showed that the anatomic and histopathologic features of the disease in the pancreas were essentially the same in the two series. Interstitial fibrosis and residual necrosis were rather constant observations. Cyst and abscess formation and deposition of calcium occurred in both. Alcohol becomes an etiologic suspect in both series. Treatment of chronic relapsing pancreatitis associated or unassociated with disease of the biliary tract is the same, except that there is need for surgical removal of the diseased gallbladder. Certain pathologic observations suggested that in chronic relapsing pancreatitis, disease of the biliary tract may be secondary to the disease of the pancreas.

Treatment of Nonspecific Ulcerative Colitis.—Maratka and Wagner treated 35 patients with nonspecific ulcerative colitis with autovaccine. Injections were given every three to five days in such a way that 0.1 cc. was injected intracutaneously and the rest subcutaneously. The dosage was determined and the injections spaced so as to avoid systemic focal and local reactions. Careful removal of the material from all the infectious foci and also directly from the lesion, serologic and immunologic examination of the pathologic nature of the cultured micro-organisms by autoagglutination and by skin tests, and preparation of the vaccine according to these findings, are of the greatest importance. Results showed that autovaccination is a valuable supportive measure in cases of mild and moderately severe ulcerative colitis in the stage of subchronic suppuration and of persisting ulcers when the general evolution is stationary or regressive. The treatment must not be started either during a violent attack or when the general condition is poor. In suitable cases autovaccine contributes to shortening of attacks and exerts an especially favorable influence on the character of the interval between them. It frequently helps to remove manifestations of persisting infection and thus changes the type of course from the chronic to the periodic. This can give the semblance of a clinical "cure." It may also be capable of preventing the transition of the disease process from a mild to a severe form. Autovaccination probably specifically combats or prevents secondary infection and sensitization.

Journal of Clinical Investigation, Boston

27:389-564 (July) 1948. Partial Index

Mineral Balance During Brief Starvation: Effect on Serum Electrolytes and Mineral Balance of Maintaining Intake of Certain Mineral Constituents. L. E. Duncan Jr., R. J. Meyer and J. E. Howard.—p. 389.
Relation of Albumin to Precipitable Iodine of Serum. J. P. Peters and Evelyn B. Man.—p. 397.
Nitrogen Balance Studies on Kempner Rice Diet. W. B. Schwarts and J. K. Merlis.—p. 406.
Effects of Rate of Administration of Amino Acid Preparations on Urinary Wastage of Amino Acid Nitrogen in Man. C. J. Smyth, S. Levey and A. G. Lasichak.—p. 412.
*Comparative Effects of Continuous and Intermittent Penicillin Therapy on Formation of Antistreptolysin in Hemolytic Streptococcal Pharyngitis. E. D. Kilbourne and J. P. Loge.—p. 418.
Quantitative Antistreptokinase Studies in Patients Infected with Group A Hemolytic Streptococci: Comparison with Serum Antistreptolysin and Gamma Globulin Levels with Special Reference to Occurrence of Rheumatic Fever. H. C. Anderson, H. G. Kunkel and M. McCarty.—p. 425.
Effect of Heparin and Dicumarol Anticoagulant Therapy on Erythrocyte Sedimentation Rate. S. W. Cosgriff.—p. 435.
Sensitivity of Skeletal Muscle to Intra-Arterial Acetylcholine in Normal and Myasthenic Man. G. H. Acheson, J. L. Langohr and J. B. Stanbury.—p. 439.
Response of Citric Acid Levels to Oral Administration of Glucose. S. Natelson, J. B. Pincus and J. K. Lugovoy.—p. 446.
Effects of Various Amino Acids on Peripheral Blood Flow and Skin Temperature. M. B. Macht.—p. 454.
Antihyaluronidase Studies of Serums from Patients with Rheumatic Fever, Streptococcal Infections, and Miscellaneous Non-Streptococcal Diseases. R. W. Quinn.—p. 471.
Nitrous Oxide Method for Quantitative Determination of Cerebral Blood Flow in Man: Theory, Procedure and Normal Values. S. S. Kety and C. F. Schmidt.—p. 476.
Effects of Altered Arterial Tensions of Carbon Dioxide and Oxygen on Cerebral Blood Flow and Cerebral Oxygen Consumption of Normal Young Men. S. S. Kety and C. F. Schmidt.—p. 484.
Effects of Increased Intracranial Pressure on Cerebral Circulatory Functions in Man. S. S. Kety, H. A. Shenkin and C. F. Schmidt.—p. 493.
Blood Flow and Oxygen Consumption of Human Brain in Diabetic Acidosis and Coma. S. S. Kety, B. D. Polis, C. S. Nadler and C. F. Schmidt.—p. 500.
Urinary Excretion of Insulin by Normal and Diabetic Subjects. I. A. Mirsky, C. J. Podore, J. Wachman and R. H. Broh-Kahn.—p. 515.

Effect of Penicillin on Antistreptolysin Formation.—Kilbourne and Loge divided 127 cases of hemolytic streptococcic pharyngitis into three groups. One group served as an untreated control, one group was treated with large single doses of penicillin, and the third received virtually continuous penicillin therapy. Antibody response, as measured by the antistreptolysin titers, was studied in all patients. In the untreated group the proportion of patients exhibiting a rise was comparable to that usually seen in streptococcic pharyngitis and scarlet fever. The antistreptolysin response in the group treated with continuous penicillin therapy was of appreciably lower frequency and magnitude than that manifested by the untreated group. Patients who received intermittent treatment with penicillin manifested an incidence and degree of antibody response intermediate between that of the untreated and continuously treated groups. Analysis of cases in this study in which late complications developed reveals data in agreement with this past experience. In 5 patients definite evidences of late sequelae developed. Two had rheumatic fever, 1 severe arthralgia with elevated sedimentation rate, 1 had microscopic hematuria, and another prolonged fever of nineteen days' duration. In all 5 patients a rise in antistreptolysin titer developed. Three had been treated with intermittent high dosages of penicillin, while the 2 remaining cases were in the untreated group. No late sequelae have been observed in the group treated with sustained penicillin therapy.

Journal of Investigative Dermatology, Baltimore

11:1-92 (July) 1948

Treatment of Chronic Ulceration of Postradiation Scar Tissue with Local Infiltration of Aqueous Solution of Penicillin. J. H. Lamb and H. L. Boyer.—p. 3.
Sensitization to Monoglyceryl Para-Aminobenzoate: Preliminary Report. R. L. Baer and L. Meltzer.—p. 5.
Effect of Aging Solution of Silver Nitrate on Its Cutaneous Reaction. L. E. Gaul and G. B. Underwood.—p. 7.
Lichen Striatus and Lichen Planus: Report of Case of Simultaneous Occurrence, with Discussion of Nomenclature and Mechanics of Linear and Systematized Dermatoses. H. Pinkus.—p. 9.
Diagnostic Test for Distinguishing Pemphigus, Dermatitis Herpetiformis, Disseminate Lupus Erythematosus and Erythema Multiforme Exudativum. A. L. Welsh.—p. 19.
Technic for Studying Epithelial Cells of Skin in Relation to Disinfection. L. H. T. Bernstein.—p. 49.
Philological Notes on Words Erythroderma, Erythrodermia and Erythema. M. Leider.—p. 63.
*Allergic Eczematous Reactions of Nail Bed: Persistent Subungual and Ungual Changes Based on Contact with "Undercoats" Containing Artificial Resins and Rubbers. M. B. Sulzberger, C. R. Rein, S. J. Fanburg and others.—p. 67.
Epidermiology of Skin Cancer. S. Peller.—p. 73.

Ungual Changes from Undercoats of Nail Polish.—Sulzberger and his co-workers say that a new nail disorder due to a nail polish "undercoat" has recently come to the attention of dermatologists. They believe it a conservative estimate that the actual number of cases extant at this writing is likely to be at least in the hundreds. The solution of phenol-formaldehyde resins and synthetic rubbers in methyl ethyl ketone which caused all the cases is of the type of formula common to several products, all of which have become available recently. The manufacturers of one brand estimate that one million women use their product each week. The authors report 12 cases due to this nail polish "undercoat" seen in their private practices between October 1947 and April 1948. The clinical features common to all cases, were: (1) a discoloration, varying from yellow through red-blue and magenta to brown and almost black, of the distal one to two thirds of every, or almost every, fingernail. This discoloration was diffuse but often also punctate; (2) separation, of variable degrees, of the distal nail from its bed; (3) a variable amount of dark, compact, apparently hyperkeratotic material under the nail; (4) a variable amount of change in the visible skin of the fingertip and perionychium, and (5) subjective symptoms, also of variable degree. The visible cutaneous changes, in general, were minimal and consisted of slight erythema, edema and scaling of the fingertip under the free edge of the nail of one or two fingers. One patient had severe involvement, including pustular paronychia, so that two fingernails were removed for relief. Further studies and additional cases indicate that the subjective symptoms can on occasion be practically absent, so that some patients are unaware of substantial subungual changes until they see them by chance at some time when the nail lacquer is removed. Different samples of the same brand of "undercoat" differ widely in their allergenic properties, so that some bottles may fail to evoke positive reactions to patch tests while others cause strong reactions in the same patient and at the same time.

Journal of Lab. and Clinical Medicine, St. Louis

33:789-918 (July) 1948

- *Results of Vaccination Against Influenza During Epidemic of 1947. C. G. Loosli, J. Schoenberger and Gwendolyn Barnett.—p. 789.
- Topical Application of Subtilin to Tuberculous Lesions in Man. S. M. Farber, H. R. Eagle, H. H. Anderson and R. D. Gorman.—p. 799.
- Administration of Penicillin and Streptomycin by Means of Hypospray Apparatus (Jet Injection): Absorption, Toxicity and Stability. H. H. Hirsh, H. Welch, B. Milloff and S. Katz.—p. 805.
- Use of Yeast Phase Antigens in Complement Fixation Test for Histoplasmosis: I. Preliminary Results with Rabbit Serums. S. Saslaw and Charlotte C. Campbell.—p. 811.
- Concentration of Labile Factor of Prothrombin Complex in Human, Dog and Rabbit Blood; Its Significance in Determination of Prothrombin Activity. A. J. Quick and M. Stefanini.—p. 819.
- *Blood and Bone Marrow Concentration of Atabrine and Its Role in Aplastic Anemia.* L. G. Parmer.—p. 827.
- *Effect of Ligation of Pancreatic Ducts and of Pancreatectomy After Duct Ligation on Serum Lipase. M. M. Nothman, Dennie Pratt and J. Benotti.—p. 833.
- A Resin Artificial Kidney. E. E. Muirhead and A. F. Reid.—p. 841.
- Relation of Phenol Retention to Uremia and Effect of Phthalylsulfathiazole and Streptomycin on Phenol Production. S. L. Wallace, J. M. Little and J. R. R. Bobb.—p. 845.
- Mechanisms of Desoxycorticosterone Action: I. Relation of Fluid Intake to Blood Pressure. D. M. Green.—p. 853.
- Activity of Microbial Animal Protein Factor Concentrates in Pernicious Anemia. E. L. R. Stokstad, A. Page Jr., J. Pierce and others.—p. 860.

Vaccination Against Influenza.—Loosli and his associates say that in the fall of 1946 a study was organized at the University of Chicago to test further the usefulness of vaccination for protection against influenza. Two thousand and twenty students were employed in the epidemiologic study. Seven hundred and ninety volunteers were vaccinated and 1,230 served as controls. The vaccination program was carried out over a period from Nov. 6 to Dec. 6, 1946. No more than 50 per cent of the population in a given house were vaccinated. A record was kept of each student and all respiratory illnesses were recorded. A sharp increase in the incidence of acute disease of the respiratory tract occurred among the student population during the first week in March 1947. The majority presented symptoms characteristic of mild influenza. No prophylactic effect was observed after vaccination with combined A and B influenza virus vaccines. The time between vaccination and the onset of the epidemic was probably not important in accounting for the lack of effect of the vaccines. Of most importance was the absence of a close antigenic relationship between the viruses in the vaccine and the strains causing the epidemic; this has been demonstrated by virus isolation and serologic studies. Failure to demonstrate the usefulness of vaccine during the 1947 epi- [illegible]mic should not be taken as a reflection on the vaccine or on [illegible]ous studies during which positive results were obtained. [illegible] made during the 1943 to 1945 epidemics established the [illegible] of vaccination against the disease caused by a virus strain [illegible], related to the strains in the vaccines. However, a com- [illegible]n of data concerning the value of vaccination during this [illegible] 1945 epidemics show clearly that a vaccine [illegible]otection during one epidemic does not insure [illegible] subsequent outbreaks. The efficiency of a [illegible] (1) on its ability to initiate an adequate [illegible] and (2) on a close antigenic relationship [illegible] components in the vaccine and those initiating [illegible]

[illegible] of Pancreatic Ducts on Serum [illegible]—[illegible] and his associates say that experiments of [illegible]dall have become the basis for the clinical use [illegible] test in the diagnosis of pancreatic disease. [illegible]opper and Sorter's results are correct, the serum [illegible] is deprived of its essential experimental confirmation. [illegible]rizing their studies, the authors conclude that serum [illegible]se is of both pancreatic and extrapancreatic origin. Its pan[illegible]eatic origin is proved by the following facts: (1) rise of serum [illegible]pase after ligation of the pancreatic ducts in all 21 dogs; (2) [illegible]crease of the serum lipase after total pancreatectomy, and (3) [illegible]mediate drop of the serum lipase to almost zero in five days [illegible]ter total pancreatectomy, when the level for serum lipase pre[illegible]ously has been raised by ligation of the ducts. The recurrence [illegible] serum lipase two to three weeks or longer after total pan[illegible]eatectomy proves that there is also an extrapancreatic source [illegible]r the enzyme. The liver is a possible source. The mechanism [illegible]hich leads to the rise of serum lipase is absorption of the enzyme into the blood stream after blocking of the flow of the pancreatic juice. When ligation of the ducts is followed by the production of a pancreatic fistula the elevated serum lipase drops to normal levels.

Journal-Lancet, Minneapolis

68:297-332 (Aug.) 1948

- Lung Cysts. N. K. Jensen and T. J. Kinsella.—p. 297.
- Submucous Lipomas of Ileocecal Valve. G. M. Kelby.—p. 301.
- Staphylococcic Actinophytosis (Botryomycosis). N. C. Plimpton.—p. 305.
- Early Diagnosis of Strabismus in Children. K. E. Sandt.—p. 307.
- Conditions Simulating Roentgen Appearance of Intestinal Obstruction. A. W. Naslund.—p. 312.
- Total Abdominal Hysterectomy: Analysis of 250 Consecutive Operations Without Mortality. P. Larson.—p. 314.
- Sclerosing, Non-Suppurative Osteomyelitis. A. T. Hays.—p. 317.
- Sterile Pyuria. W. J. Noonan.—p. 324.

Journal of Neurosurgery, Springfield, Ill.

5:327-412 (July) 1948

- *Spontaneous Rupture of Cerebral Ventricles. A. Torkildsen.—p. 327.
- Repair of Cranial Defects with Zirconium: Experimental Study. J. I. Bates and C. R. Reiners.—p. 340.
- Reaction of Cerebral Tissue to Silver, Tantalum and Zirconium: Discussion of Use of These Metals for Hemostatic Brain Clips. J. I. Bates, F. H. Lewey and C. R. Reiners.—p. 349.
- Vascular Tumors of Brain and Spinal Cord and Their Treatment. M. Trupp and E. Sachs.—p. 354.
- *Surgical Management of Metastatic Brain Abscess. H. V. Rizzoli, W. S. McCune and I. J. Sherman.—p. 372.
- Subarachnoid Alcohol Block in Paraplegia: Its Beneficial Effect on Mass Reflexes and Bladder Dysfunction. C. H. Shelden and E. Bors. —p. 385.
- Clinical Use of Fluorescein in Neurosurgery: Localization of Brain Tumors. G. E. Moore, W. T. Peyton, L. A. French and W. W. Walker.—p. 392.

Spontaneous Rupture of Cerebral Ventricles.—Torkildsen describes 5 cases of spontaneous rupture of the cerebral ventricular system. In 4 cases the rupture resulted in the formation of a cyst occupying the interpeduncular space, extending below the tentorium and covering the quadrigeminal plate. In case 1 an aperture was seen in the posterior portion of the lateral ventricle near the midline. This seems to be the most common location, as far as one can judge by the literature. In cases 2 and 5 a rupture of the posterior wall of the third ventricle had taken place. In case 3 there was no postmortem examination. Case 4 differs from the others inasmuch as the rupture did not create a cyst below the tentorium. After the spontaneous rupture the cerebrospinal fluid filled the supratentorial subdural space on the left side, resulting in an accumulation of the cerebrospinal fluid causing cerebral compression. The anamnesis gives information about an episode that probably was related to the actual rupture of the ventricular wall in only 1 of the cases. Stenosis of the sylvian aqueduct is a common cause of spontaneous ventricular rupture, but slowly growing tumors may also play a part. The accompanying intracranial hypertension should be treated by ventriculocisternostomy.

Surgical Management of Metastatic Brain Abscess.—Rizzoli and his co-workers have collected 10 cases of cured metastatic brain abscess. One of these patients died two years later of multiple abscesses elsewhere in the body, but there was no evidence of an intracerebral infection. In 7 of the 10 cases the abscesses were thoracogenic; 2 patients had had tonsillitis. The remaining patient had an abscess of the thigh at the beginning of his illness, but when cerebral symptoms developed, the roentgenogram also showed pneumonitis of the left lung. He was found on postmortem examination to have multiple bilateral chronic abscesses of the lungs. The authors stress that with the onset of cerebral symptoms, vigorous chemotherapy should be instituted, including intrathecal administration of penicillin (5,000 to 10,000 units) every two days and systemic use of penicillin. In addition, sulfadiazine should be administered. Streptomycin may be used if indicated. The patient must be watched and given supportive therapy, including blood, plasma, oxygen, and anticonvulsants if necessary. The primary focus should be treated conservatively but adequately to prevent further debilitation. Intracranial surgical treatment should not be considered for at least ten days after the onset of the cerebral symptoms. When the rate of improvement decreases, the abscess should be tapped through a trephine opening, the pus aspirated with a ventricular needle and penicillin (25,000 to 60,000 units) instilled into the abscess cavity. If the responsible organism is more sensitive to streptomycin, this should be used instead. Occasional patients will be cured by tapping only. They should not be discharged as cured unless this is confirmed by an air study. Removal of the abscess through a craniectomy wound is probably a safer procedure than removal through an osteoplastic bone flap. However, the latter method can be used successfully, if care is taken to preserve the blood supply of the dural flap and the bone flap. The abscess can be aspirated while the enucleation is being done if this is necessary to reduce its bulk. Intramuscular penicillin therapy should be continued for at least three weeks postoperatively. Sulfadiazine may be administered during this peroid of treatment, especially if contamination occurs at operation. The pessimism with which metastatic brain abscess has been viewed in the past is no longer justified.

Journal Pharmacology & Exper. Therap., Baltimore

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Pharmacologic Comparison of Optical Isomers of Methadon. C. C. Scott, E. B. Robbins and K. K. Chen.—p. 282.
Rodenticidal Activity of Fluoroacetphenylhydrazide ("Fanyline") and Its Oral Toxicity to Several Species with Note on Toxicity of 64 Other Candidate Rodenticides. L. Karel.—p. 287.
Some Aspects of Thiamine Toxicity. J. A. Smith, P. P. Foa, Harriet R. Weinstein and others.—p. 294.
Pharmacologic Studies on Analgesic Piperidine Derivatives. L. O. Randall and G. Lehmann.—p. 314.
Inhibition of Succinoxidase by Vitamin P-Like Flavonoid 2',3,4-Trihydroxy Chalcone. G. R. Bartlett.—p. 329.
Comparative Pharmacology of Cyclohexylalkylamines. D. F. Marsh. —p. 338.
Toxicity and Muscular Effect of d-Tubocurarine Combined with Beta-Erythroidine, Myanesin or Evipal. F. M. Berger and R. P. Schwartz. —p. 362.
Absorption, Distribution, Excretion and Fate of Para-Aminosalicylic Acid. E. L. Way, P. K. Smith, D. L. Howie and others.—p. 368.

Kentucky Medical Journal, Bowling Green

46:301-348 (Aug.) 1948

Teropterin, Pteroyl-Triglutamic Acid in Human Cancers: Preliminary Report. G. F. Brockman and G. L. Simpson.—p. 309.
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Report on Use of Nitrogen Mustard. J. Love, L. T. Minish and D. J. Vincent.—p. 326.
Radium Naso-Pharyngeal Applicator in Treatment of Hypertrophied Adenoidal Tissue. C. L. Woodbridge.—p. 329.
Twenty-Three Cases of Pulmonary Tuberculosis Treated with Streptomycin. R. Starr.—p. 332.
Dangers in Drugs. W. K. Keller.—p. 336.
Résumé of Fifty Years in Practice of Medicine. N. M. Garrett.—p. 338.
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Minnesota Medicine, St. Paul

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Community Leadership by Physicians. T. A. Hendricks.—p. 747.
Can Local Health Co-Operative Fit Into Voluntary Prepayment Medical Care Movement? L. S. Kleinschmidt.—p. 751.
Nebraska State Medical Association's Fee Schedule for Public Agencies. F. L. Rogers.—p. 756.
Plan for Establishing Local Health Councils. F. Sternagel.—p. 759.
Medical Organization and Social Progress. W. D. Stovall.—p. 762.
Review of Epidemiology of Scarlet Fever. A. G. Berger.—p. 765.
Osler in Minnesota: His Interest in Medical Education and Licensure. J. Eckman.—p. 776.
Role of Electrocardiogram in Cardiac Disease. H. L. Smith.—p. 788.

Oklahoma State Medical Assn. Journ., Oklahoma City

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Diagnostic Pointers in Rheumatic Diseases. E. Goldfain.—p. 225.
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Pediatrics, Springfield, Ill.

2:1-146 (July) 1948

*Treatment of Infantile Diarrhea with Streptomycin and Oral Amigen Mixture. Elvira Goettsch, G. Cobley and M. Mulloy.—p. 1.
Volume of Extracellular Body Fluids in Malnutrition. E. Kerpel-Fronius and C. Kovach.—p. 21.
*Hemolytic Streptococcal Vaginitis in Children. P. L. Boisvert and D. N. Walcher.—p. 24.
Severe Erythema Multiforme of Pluriorificial Type (Stevens-Johnson Syndrome); Resulting in Blindness in a Patient Treated with Trimethadione (Tridione). B. Shaffer and P. Morris.—p. 30.
Clinical Use of Alcohol-Refined Toxoids. J. M. Ruegsegger and G. K. Looser.—p. 35.
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Outlines for Well Baby Clinics: II. Recording Development of Second Twelve Months. E. S. Hewitt and C. A. Aldrich.—p. 69.
Childhood Behavior Sequelae of Asphyxia in Infancy: Special Reference to Pertussis and Asphyxia Neonatorum. G. B. Rosenfeld and C. Bradley.—p. 74.
Accidental Injuries in Epileptic Children. M. R. Aisenson.—p. 85.

Streptomycin in Infantile Diarrhea.—In a severe epidemic of infantile diarrhea in 1945 and subsequently, Goettsch and her co-workers found that bacteriologic cultures of the nasopharynx and the catheterized urine showed a predominance of gram-negative organisms of the colon group. Stool cultures were negative. Since the currently used measures were not entirely satisfactory, the authors began to use streptomycin. The effective dose for infantile diarrhea was found to be 0.5 Gm. intramuscularly and 0.5 Gm. orally per day for seven to ten days. The response of seriously ill infants with parenteral diarrhea to streptomycin was dramatic, presumably because of the specific action of the drug against the gram-negative organisms. Suggestions are offered for fluid and electrolyte replacement by means of an oral mixture of "amigen," which permits the introduction of potassium, calcium and nitrogen as well as sodium and chloride by mouth shortly after admission. The use of streptomycin and the oral mixture of "amigen" as an adjunct to the customary routine employed in previous years effectively shortened the hospital stay, decreased the amount of intravenous therapy and reduced the mortality. During the eight month period of observation no deaths were encountered which could be attributed to diarrhea.

Streptococcic Vaginitis in Children.—Boisvert and Walcher say that their attention was first focused on the probable relationship between hemolytic streptococci and vaginitis in children when in 1939 a 21 month old baby was examined because of vaginal discharge. A stained smear of the discharge showed gram-negative diplococci which suggested the diagnosis of gonococcic vaginitis. On culture, a pure growth of hemolytic streptococci was obtained. No gonococcus colonies were present. This study is based on the cultures taken on 286 patients seen on a pediatric inpatient service from 1928 through 1945 and in a pediatric clinic from 1935 through 1945. Five hundred and twenty-four vaginal cultures were examined. There were 37 patients with hemolytic streptococci, 33 with gonococci and 11 with pneumococci. Nasopharyngeal cultures were obtained on 30 of the 37 patients with hemolytic streptococcus vaginitis. The 3 case histories which are presented indicate great variability. The authors stress that the value of culturing all vaginal discharges cannot be overemphasized. Vaginitis due to hemolytic streptococci has been misdiagnosed as gonococcic vaginitis when only a direct smear of the discharge has been utilized for diagnostic purposes. Hemolytic streptococci are frequently found in the nasopharynx of those children with vaginitis due to hemolytic streptococci. In those instances in which grouping and typing of the streptococci from both the vagina and the nasopharynx were done, the same group and the same type were found in both places.

Physiological Reviews, Baltimore

28:283-382 (July) 1948

Some Thermodynamic and Kinetic Aspects of Metabolic Phosphorylation. A. G. Ogston and O. Smithies.—p. 283.
Alloxan Diabetes. F. D. W. Lukens.—p. 304.
Renal Function in Early Life. R. A. McCance.—p. 331.
Chemical, Physical and Morphologic Properties of Animal Viruses. J. W. Beard.—p. 349.
Relation of Nutritional Deficiencies to Graying. D. V. Frost.—p. 368.

Plastic and Reconstructive Surgery, Baltimore

3:385-516 (July) 1948

Plastic Surgery Routine for Surgical House Staffs. J. B. Brown, L. T. Byars, F. McDowell and M. P. Fryer.—p. 385.
Massive Combined Tube and Open Flap Used as Unity Rotation Pedicle Transplant for Repairs of Certain Deep Surface Defects. B. N. Soderberg.—p. 407.
Primary Repair of Total Avulsion of Skin from Penis and Scrotum. *A. D. Davis and R. E. Berner.—p. 417.*
Ischemic Contracture, Local, in Hand. S. Bunnell, E. W. Doherty and R. M. Curtis.—p. 424.
*Correction of Interdigital Burn Contractures of Hand. R. C. Tanzer.—p. 434.
Repair of Cicatricial and Dupuytren's Contractures of Hand. H. May.—p. 439.
Operation to Aid in Formation of New Nail Beds. Beverly Douglas.—p. 451.
Eyelid and Socket Surgery. F. Risdon.—p. 454.
Severe Lid *Deformities: Principles of Repair.* A. Callahan.—p. 456.
Ankylosis of Temporo-Mandibular Joint. Claire L. Straith and J. R. Lewis.—p. 464.
Pharyngeal Bursa Associated with Cleft Palate: Report of 2 Cases. M. Adair.—p. 478.
Epidermolysis Bullosa Hereditaria: Report of Case with Unusual Associated Deformities. E. A. Kitlowski and E. B. Hanfield.—p. 481.
Repair of Surface Defect of Chest Following Gangrene. C. F. Steiss.—p. 489.
*"Vacutome"—*New Machine for Obtaining Split Thickness Skin Grafts.* D. E. Barker.—p. 492.

Interdigital Burn Contractures of Hand.—Severe burns of the hand frequently produce contractures of the dorsal aspect of the interdigital webs, characterized by the crescentic fold overlying the web proper. Tanzer explains a method of repair that was introduced in an army plastic center and has since been used with gratifying results. Illustrations show the method of replacement of an interdigital contracture by a rotated pedicle flap from the side of an adjacent finger, combined with a free graft. Photographs show the preoperative status and the condition of the hands two years after the operation.

New Machine for Obtaining Skin Grafts.—Barker points out that Padgett's dermatome advanced the taking of skin grafts tremendously, but it still has certain disadvantages. He describes a new machine which utilizes the principle of a suction cup with a knife attached. The knife can be set at variable distances. During the past nine months this device, the "vacutome," has been used on numerous patients with excellent results. Early it became apparent that unless guides were added a graft of uniform width could not be obtained. The author describes the technic of the "vacutome" and the clinical results obtained with it. He admits that a disadvantage of the technic is that one cannot obtain a graft with the "vacutome" from a thin depressed abdomen. Likewise in a thin and wasted person decided contour changes in the rib area would present a difficulty. Grafts of varying thickness can be taken from nearly all areas of the body. Uniform grafts can be cut from 4 to 15 inches (10.2 to 38 cm.) long, the length being determined by the skin area available. Skin guards prevent gouging of the skin beyond the desired area.

Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

23:321-360 (July 21) 1948

Coarctation of Aorta: Historical Review. N. A. Christensen.—p. 322.
Pathologic Considerations in Coarctation of Aorta. J. E. Edwards, N. A. Christensen, O. T. Clagett and T. R. McDonald.—p. 324.
Collateral Circulation in Coarctation of Aorta. J. E. Edwards, O. T. Clagett, R. L. Drake and N. A. Christensen.—p. 333.
*Clinical Features in Coarctation of Aorta: Review of 96 Cases. N. A. Christensen and E. A. Hines Jr.—p. 339.
Value of Roentgenologic Diagnosis in Coarctation of Aorta. D. G. Pugh.—p. 343.
Studies on Blood Flow in Extremities in Cases of Coarctation of Aorta: Determinations Before and After Excision of Coarctate Region. K. G. Wakim, O. Slaughter and O. T. Clagett.—p. 347.
Preoperative and Postoperative Studies of Intraradial and Intrafemoral Pressures in Patients with Coarctation of Aorta. G. E. Brown Jr., O. T. Clagett, H. B. Burchell and E. H. Wood.—p. 352.
Surgical Treatment of Coarctation of Aorta. O. T. Clagett.—p. 359.

Clinical Features of Coarctation of Aorta.—Christensen and Hines say that adequate records for evaluation were available in 96 of the 119 patients with coarctation of the aorta observed at the Mayo Clinic between 1925 and 1947. The ages of the patients at the time that the diagnosis was first made varied between 4 and 59 years. Although in general surgeons prefer to operate on patients with this disorder prior to their twentieth birthday, only 26 per cent of this group were below that age. Nearly two thirds of the patients, however, were seen prior to the age of 30 years. The untimely deaths in young persons with coarctation may well explain the sharp drop in the age incidence after the third decade. Important features in the diagnosis of coarctation of the aorta are: (1) characteristic *differences in the arterial pulsations and in indirect blood* pressure in the upper and lower extremities; (2) the presence of one or more cardiac or cardiovascular murmurs; (3) the presence of a well developed collateral arterial system that by-passes the coarctation; (4) characteristic erosions seen as "rib notching" on roentgenograms and (5) characteristic direct intra-arterial radial and femoral arterial pulsations and blood pressure differences. The authors discuss the incidence of these *and other diagnostic* signs.

Psychiatric Quarterly, Utica, N. Y.

22:175-388 (April) 1948. Partial Index

Psychosomatic and Rorschach Aspects of Stuttering. F. R. Pitrelli.—p. 175.
Symptomatic Use of Electric Convulsive Therapy for Acute Psychoses of *Military Personnel. J. B. Funkhouser.—p. 204.*
Treatment and *Theory of Prolonged* Insulin Coma with Case Presentation. N. Kalichman.—p. 213.
Pentothal Sodium: Adjunct in Understanding of Schizophrenic Reaction: Preliminary Report. H. H. Donahue, M. L. Winer and N. M. Glazer.—p. 221.
Bronchial Asthma: Contribution to Relation of Emotional Factors to Bronchial Asthma. E. B. Kris.—p. 257.
Practical Methods of Group Psychotherapy. J. R. Jacobson.—p. 270.
Preventive Military Psychiatry in Light of Impending Military Conscription. S. R. Lehrman.—p. 302.
Regressive Electric-Shock in Schizophrenics Refractory to Other Shock Therapies. C. J. C Kennedy and D. Anchel.—p. 317.

United States Naval Med. Bulletin, Washington, D. C.

48:503-648 (July.-Aug.) 1948

Discussion of Reiter's Syndrome with Report of Case. C. A. Swanson and A. J. Delaney.—p. 503.
Formation of Phage in Cell-Free Preparations. A. P. Krueger, T. Cohn, P. N. Smith and C. D. McQuire.—p. 510.
*Nonoperative Treatment of Acute Empyema Thoracis with Penicillin: Discussion of Its Limitations and Subsequent Surgical Management of Its Failures. R. E. Brown and R. K. Moxon.—p. 513.
Dental Logistics in Amphibious Operations. F. G. Ulen.—p. 528.
Persisting Ocular Defects in Pacific War Prisoners. E. J. Olenick.—p. 538.
Six Atypical Cases of Syphilis. J. F. Morrell.—p. 547.
Neuropsychiatric Screening of a Million Men. E. C. Reitzel, V. L. Miller and G. W. Knox.—p. 555.
Rapid Technic for Diagnosis of Scabies. C. C. Carpenter.—p. 566.

Treatment of Acute Thoracic Empyema.—Brown and Moxon report 2 cases representative of that group of thoracic empyemas which will be cured by repeated thoracenteses with aspiration of pus and instillation of penicillin. In these cases clinical response is dramatically rapid. A 13 or 15 gage needle is used for thoracentesis in order that thick pus may be aspirated without difficulty. Saline irrigations facilitate this. Large doses of penicillin (200,000 to 600,000 units) are instilled at the completion of drainage and irrigation. Penicillin is administered intramuscularly in more conservative dosage of 50,000 units every three hours, and discontinued from four to seven days after the last thoracentesis. At first thoracenteses are performed daily, but as the fluid decreases and becomes negative in culture, the interval between taps is lengthened. The authors present 4 additional cases which illustrate the limitations of the nonsurgical treatment of thoracic empyema. These cases were transferred to their hospital after inadequate treatment elsewhere. Three of the 4 patients were admitted with large, sterile, undrained empyema cavities following eight to sixteen weeks of nonoperative treatment. In view of the strands and clumps of fibrin found at operation and the prompt healing which followed evacuation, the *authors* feel that their operative procedure was justified. If a thoracic empyema does not respond favorably to conservative treatment of one or two weeks' duration surgical intervention is indicated. This can take the form of intercostal drainage, *thoracostomy* with rib resection or decortication. The authors describe a simple method for maintaining relatively high degrees of suction on the empyema cavity in the ambulatory patient.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

17:235-312 (April) 1948

*Controlled Respiration and Curare in Modern Surgery. R. H. Orton.—p. 235.
Stress Incontinence in the Female. P. A. Trealy and H. K. Pacey.—p. 247.
Observations on Injuries of Radial Nerve Due to Gunshot Wounds and Other Causes. S. Sunderland.—p. 253.
Intracranial Hydatid Disease, with Report of Case. D. Miller and J. Fleming.—p. 291.
*Nerve Anastomosis in Treatment of Facial Paralysis. H. C. Trumble.—p. 297.

Controlled Respiration and Curare.—Controlled respiration developed as the result of thoracic surgery and curare as an adjunct in abdominal surgery. Today they are used together in both types of operation, though the reasons for their use differ somewhat in the two cases. Controlled respiration is a form of anesthesia in which a state of apnea is produced and the respiratory exchanges are maintained by periodic inflation of the lungs throughout the duration of anesthesia. In thoracic surgery its use prevents mediastinal "flap" and paradoxic respiration, two of the major hazards of open thorax surgery. It maintains respiratory exchanges in the presence of an open thorax. Controlled respiration possesses advantages over voluntary respiration in thoracic surgery and should be employed during abdominal surgery whenever respiratory depression occurs. By its use normal exchange of oxygen and carbon dioxide is possible in all circumstances. By producing muscular relaxation and abolishing reflexes curare allows the use of light anesthesia and therefore aids in the avoidance of shock. In abdominal surgery, light anesthesia combined with the use of curare and controlled respiration produced minimum disturbance in the patient compatible with adequate muscular relaxation. In thoracic surgery curare controls bronchial reflexes and with controlled respiration gives the most satisfactory conditions for surgery. The use of controlled respiration and of curare demands a high degree of anesthetic skill.

Nerve Anastomosis in Facial Paralysis.—Trumble employed anastomosis of hypoglossal and facial nerve in 18 patients with facial paralysis and in 2 with clonic facial spasm. The twelfth nerve was selected as the donor nerve because of the close relationship between the muscles of the tongue and those of facial expression. Recovery of tone and voluntary power was satisfactory in 18 patients, unsatisfactory in 1. One patient has not been reviewed. Recovery was satisfactory in 2 cases in which there was a delay of nine and a half months between the date of onset of facial paralysis and that of the reparative operation, and also in one other in which the delay was twenty-six months. These observations demonstrate that degeneration of muscle fibers and end plates is not of such importance as is generally believed.

British Medical Journal, London

2:1-60 (July 3) 1948

Changing Face of Medicine. L. Whitby.—p. 2.
Medicine and Public Health. A. S. MacNalty.—p. 6.
Administration of Medicine. E. R. Boland.—p. 9.
Health and Municipal Hospital Services of London. A. Daley.—p. 19.
End of "Compulsory" Vaccination. Greenwood.—p. 22.
Role of Part-Time Consultant. G. Lowe and T. N. Rudd.—p. 24.

2:61-118 (July 10) 1948

Thiouracil and Its Derivatives in Routine Treatment of Thyrotoxicosis. H. P. Himsworth.—p. 61.
Liver Function Tests in Cases Treated with Thiouracil Compounds. J. Goodwin.—p. 64.
Blood Diastase and Lipase Changes in Pancreatitis. H. Wapshaw.—p. 68.
*Streptomycin Dermatitis in Nurses. J. Crofton and H. M. Foreman.—p. 71.
Idiopathic Hypersplenism: Report of Case. R. Semple.—p 72.
Peptic Ulcer During Pregnancy: Report of Case with Perforation. D. W. James.—p. 74.
Aplastic Anemia in Simmond's Disease: Report of Case. A. Bloom and C. C. Bryson.—p. 75.

Streptomycin Dermatitis in Nurses.—Crofton and Foreman observed that during a period of eighteen months 4 of a total of 80 nurses handling streptomycin at a London hospital had dermatitis. The exposure of these nurses varied from six weeks to six months. The dermatitis consisted of an itchy papular erythema of the skin around the eyes and over the elbow flexures. The hands were involved in only 1 of the nurses. Tests of cutaneous sensitivity elicited positive reactions in the 4 nurses with dermatitis, but negative in controls. The authors stress that persons handling streptomycin should wear rubber gloves and avoid soiling their skin with the material.

Edinburgh Medical Journal

55:257-320 (May) 1948

Treatment of Thyrotoxicosis. D. M. Dunlop.—p. 257.
Surgical Treatment of Thyrotoxicosis. K. P. Brown.—p. 265.
Pulmonary Moniliasis. R. F. Robertson.—p. 274.
*Blood and Bone Marrow in Sprue Syndrome: Study of 63 Cases. Elizabeth M. Innes.—p. 282.
*Intra-Uterine Penicillin. M. M. Kriseman.—p. 293.
Hemorrhage in Obstetrics: Relation Between General Practitioner and Emergency Services. R. De Soldenhoff.—p. 302.

Blood and Bone Marrow in Sprue.—Peripheral blood findings in a series of 63 cases of the sprue syndrome are reported in detail. The series consisted of 17 cases of tropical sprue, 27 cases of nontropical sprue and 19 cases of celiac disease. The characteristic picture in the adult cases was macrocytosis of the erythrocytes, with or without anemia, both macrocytosis and anemia being more severe in the nontropical than in the tropical group. There is a tendency for this macrocytosis to persist in spite of liver therapy. The cases of celiac disease showed a high incidence of anemia which was of the hypochromic microcytic variety and which was extremely resistant to iron therapy. The marrow picture is described in 18 of the adult cases. It was megaloblastic in 9 cases (in 2 of which liver therapy had previously been used), normoblastic in 5 cases and "intermediate" in 4 cases. The marrow was found to be normoblastic in both of the cases of celiac disease in which it was examined.

Intrauterine Penicillin.—The cases reported by Kriseman include 7 of incomplete abortion, 1 case of septic abortion, 2 cases of local uterine puerperal infection and 1 case of functional uterine bleeding. The effect of intrauterine instillation of penicillin was observed in these cases. Two methods of instillation were adopted, the continuous and the intermittent. The author gained the impression that penicillin when instilled into the uterine cavity is capable of being absorbed into the general circulation and thus must exert an adequate local concentration in the uterine wall and in the channels draining the organ; namely, the lymphatics and pelvic veins. The best method of injection is by intermittent instillation. An effective dose is 200,000 units of penicillin in 5 cc. of isotonic sodium chloride solution or distilled water injected at intervals of three hours.

Irish Journal of Medical Science, Dublin

271:289-336 (July) 1948

Modern Concept of Social Medicine. J. A. Ryle.—p. 289.
Combined-Thoracoplasty: Its Characteristic, Technic and Results. G. Maurer.—p. 297.
Shoulder Pain. C. Somerville-Large.—p. 303.
Selection of Cases for Artificial Pneumothorax. M. M. Conran.—p. 315.
B-Diethylaminoethyl Dehydrocholate in Treatment of Fibrositis. D. Roden and F. Wrigley.—p. 330.

Lancet, London

2:41-84 (July 10) 1948

*Gamma-Globulin in Prevention and Attenuation of Measles. P. Hartley and others.—p. 41.
*Operations for Hernia: Technic of Nylon Darn. G. E. Moloney, W. G. Gill and R. C. Barclay.—p. 45.
Four Cases of Leptospira Canicola Infection in England. L. J. M. Laurent, T. St. M. Norris, J. M. Starks and others.—p. 48.
Isotopes and Radiation Hazards. F. Howarth.—p. 51.
Neonatal Gastrocolic Fistula: Report of Case. N. K. Pein.—p. 53.
Apparent Acute Glomerulonephritis Albuminuria: Report of Case. J. Crofton and L. Truelove.—p. 54.
Epidemic of Bullous Erythema on Legs Due to Bed-Bugs. J. Kinnear.—p. 55.

Gamma Globulin for Measles.—Hartley and his associates of the British Committee on Blood Transfusion Research say that the American Committee put at their disposal normal human serum gamma globulin antibodies prepared according to the technic of Cohn. Although tests with this material were carried out in different environments, the committee kept the trials under personal supervision. The following conclusions are stated: 1. Gamma globulin prepared by Cohn's method contains measles antibodies in high concentration. 2. The volume of gamma globulin required for the prevention and attenuation of measles is about half the volume of convalescent measles serum required. 3. Though superior in action to convalescent measles serum, gamma globulin in the doses used in these trials did not give full protection in all cases. Some degree of attenuation was obtained in almost all cases. 4. Though the potency of solutions of gamma globulin cannot be quantitatively estimated, the samples examined nearly two years after their preparation showed high protective and attenuating properties, differing but little from others which had been in circulation for a shorter time. 5. No local or general reactions followed the injection of gamma globulin.

Nylon Darn for Repair of Hernia.—Moloney and his co-workers have used nylon as a darning material to repair hernias, particularly direct and indirect inguinal hernias, both simple and strangulated. They list the requirements of a lattice that is used to reinforce a weak area and show that nylon meets those requirements. They describe and illustrate the technic of the nylon darn and say that it has given satisfaction, especially in strangulated hernia.

Tubercle, London

29:121-144 (June) 1948

Anesthesia for Major Surgery in Thoracic Tuberculosis. E. Joan Millar.—p. 121.
Case of Advanced Bilateral Pulmonary Tuberculosis Treated with Streptomycin. B. R. Sreenivasan.—p. 128.
Fate of Tuberculous Cavity. B. Mann.—p. 131.

29:145-167 (July) 1948. Partial Index

Review of Tuberculosis Control in the United States. F. J. Weber.—p. 145.
*Atelectasis During Collapse Therapy for Pulmonary Tuberculosis: Preliminary Note. J. Cuthbert and M. M. Nagley.—p. 154.
Work Done by Tuberculosis Patients. W. D. Gray.—p. 160.

Atelectasis During Collapse Therapy.—Cuthbert and Nagley have taken atelectasis to mean a ground glass appearance of a lung, a lobe or part of a lobe occurring during collapse therapy and accompanied by clinical manifestations such as rise of temperature, leukocytosis and malaise. This, they feel, is the condition—be it airlessness or not—that is commonly called "atelectasis." Cuthbert, impressed with the finding that the figures given for tuberculous tracheobronchitis in pulmonary tuberculosis would not account as a causative factor for the large number of "opaque lobes" seen in routine sanatorium work, proceeded to turn his attention to the more peripheral bronchial tree and to the bronchus draining the cavity. Postmortem studies on 26 patients revealed that the draining bronchus or bronchi were involved in 21. The usual changes were: swelling, edema and hyperemia of the mucosa and tenacious secretion in the lumen. Microscopically, tuberculous foci are present in the larger draining bronchi, between the epithelium and the cartilage, with no surface erosion at first. Later, deciliation of the bronchial mucosa, formation of granulation tissue with resultant irregularity of the lumen and, in a minority of cases, development of caseous bronchitis or partial fibrous stenosis take place. Nagley was interested in the selective, and often lobular, distribution of atelectasis occurring after artificial pneumothorax induction and carried out bronchoscopies and bronchograms on many patients without being able to demonstrate major bronchial disease. He was of the opinion that atelectasis of this nature was due to factors other than, or in addition to, disease of the major bronchi and almost certainly the etiology lay peripheral to these structures and probably in the small foci of radiologically visible tuberculous parenchymatous inflammation so often seen on the straight roentgenogram. Microscopic studies corroborated this. The authors consider the advisability of the abandonment of artificial pneumothorax when atelectasis of a lobe occurs. They regard a cavity in such an atelectatic lobe as dangerous if collapse is maintained, but this has not been fully proved. The described pathologic changes and their sequels seem to militate against the induction of artificial pneumothorax in the presence of roentgenologic signs of patches of tuberculous pneumonitis.

Acta Tuberculosea Belgica, Brussels

39:149-222 (June) 1948

Angiopneumography: Its Contribution to Interpretation of Roentgenography of Thorax and Its Importance for Study of Pulmonary Circulation. L. de Carvalho.—p. 149.
*Detection of Tuberculosis by Systematic Examination of Groups: Comparison of Results Obtained by Roentgenoscopy and Roentgenography. Mrs. Olbrechts-Tyteca.—p. 172.

Detection of Tuberculosis by Roentgenoscopy and Roentgenography.—Olbrechts-Tyteca says that systematic roentgenologic examination of groups was introduced by the antituberculosis dispensaries in 1935. The group examinations were made particularly in schools. Two forms of examinations were employed, roentgenoscopy and roentgenography. Roentgenoscopy, performed on 45,428 persons, and roentgen photography, performed on 70,357 persons, have revealed an incidence of tuberculosis that was five times higher in the first than in the second group. The superiority of roentgenoscopy over roentgenography was demonstrated again when the material was subdivided according to different types of groups examined and according to age and sex. Nearly two thirds of the patients detected by roentgenologic examinations of groups were not known to be tuberculous before. These persons would probably not have been recognized as tuberculous without the systematic group examinations, as there was no tuberculosis in the families and they did not have symptoms.

Nordisk Medicin, Stockholm

38:1247-1280 (June 25) 1948. Partial Index

*Nitrogen Mustards in Lymphogranulomatosis Maligna, Polycythmia and Myelomatosis. K. Iversen and K. Kjerulf-Jensen.—p. 1248.
Instability in Degeneration of Lumbar Disk: Anatomic Study. C. Hirsch.—p. 1252.
Treatment of Dural Lesions in Fracture of Frontal Sinus. E. Renvall and W. Behrman.—p. 1254.
Diagnostic Disk Puncture in Sciatica. K. Lindblom.—p. 1256.
Fenestration Operation in Chronic Adhesive Otitis. C. A. Hamberger.—p. 1256.
Icterus Gravis After Isoimmunization with A-Agglutination. M. Grove-Rasmussen, F. Tudvad and G. Jørgensen.—p. 1259.

Treatment with Nitrogen Mustards in Lymphogranulomatosis Maligna, Polycythemia and Myelomatosis.—Iversen and Kjerulf-Jensen report on 21 cases of disease treated with a total of one hundred and thirty-eight injections. In most of the 9 cases of lymphogranulomatosis maligna, all verified by biopsy, the immediate effect was excellent. The treatment, however, can hardly induce more effective and more lasting remissions than roentgen treatment, but in patients with the disease in the roentgen-resistant form but sensitive to nitrogen mustards the treatment will be a valuable supplement to roentgen treatment and it will also be indicated in cases with disseminated foci. Treatment attempted in 3 cases of advanced sarcomatosis gave brief improvement in the general condition in 1 case. In polycythemia and myelomatosis the preliminary results surpass results published in America; in the 3 cases of typical grave myelomatosis, verified by biopsy and observed for five to eight months, reduction of pain and simultaneous improvement in the general condition resulted and 2 of the patients were able to return to work, while in the 6 cases of polycythemia, observed for up to seven months, there was immediate subjective improvement followed by decrease in the erythrocyte values and hemoglobin percentage and improved general condition.

Policlinico (Sez. Prat.), Rome

55:481-512 (April 19) 1948. Partial Index

*Malarial Amaurosis: Case of Malarial Optic Neuritis. A. Pozzi and C. Iandolo.—p. 481.
*Multiple Sclerosis. G. Cerquetelli and C. Cantalano Nobili.—p. 486.

Malarial Amaurosis.—A woman 44 years of age presented a rapidly progressive loss of vision with complete amaurosis within six days. The first tertian malarial attack occurred two days after occurrence of amaurosis. Plasmodium vivax was found in the blood. The malaria was benign and controlled by quinine treatment. The visual condition progressed to bilateral optic atrophy. The case demonstrates possibility of early involvement of the optic tract by P. vivax.

Multiple Sclerosis.—Cerquetelli and Nobili report 3 cases of multiple sclerosis in patients who were seen in the course of the last two years at the Clinica delle Malattie Nervose e Mentali dell' Universita di Roma. The authors believe that the main causative factor in multiple sclerosis is the arteriolar spasm, which is reversible early in the course of the disease by the effect of histamine. The authors report good results from intravenous injections of 0.25 mg. of histamine for seven to fifteen consecutive days during the early period of the disease. The good results have persisted up to the present (between one and two years after discontinuation of treatment). The treatment is harmless and should be resorted to as soon as possible, even if there is still slight doubt as to the diagnosis. In the cases reported by the authors visual symptoms predominated. The aforementioned doses showed favorable effect on the arteriolar retinal spasm.

Presse Médicale, Paris

56:517-528 (July 24) 1948

*Blood Accidents in Course of Treatment with Streptomycin. E. Benhamou and R. Destaing.—p. 517.

Preoperative Management, Resuscitation Carried out During Operation and Treatment of Postoperative Disorders Based on Data Obtained by Phillips and Van Slyke's Method. M. Roux and M. Bucaille. —p. 518.

New Progress in Treatment of Visceral Leishmaniasis. P. Giraud, R. Bernard, R. and Liliane Guerrini-Pélissier.—p. 519.

Untoward Blood Reactions to Streptomycin.—Benhamou and his co-workers treated a child aged 11 with Pott's disease of eight months' duration, who presented meningeal symptoms, with 2 Gm. streptomycin daily by the intramuscular route. The general condition of the child improved, but a generalized purpura appeared on the thirtieth day of treatment with streptomycin. Sternal puncture revealed a considerable number of nonnucleated myelocytes. Penicillin in large doses and blood transfusions did not prevent death, which occurred within forty-eight hours. A child aged 3 with tuberculous meningitis was treated with streptomycin for nine months and was still receiving 0.50 Gm. of the drug daily by intramuscular route. Petechiae were observed at the level of the eyelids after each lumbar puncture. The white blood count revealed 18 per cent polymorphonuclear neutrophils. The petechiae disappeared and the number of the granulocytes increased to 40 per cent after the patient has been given 10 mg. of folic acid daily. Eosinophilia with a ratio of 12 to 36 per cent was observed in 17 of 21 patients treated with streptomycin for five to nine months. It reached its maximum about the third or fourth month of the treatment and subsided four to six weeks after treatment was discontinued. Counts of red and white blood corpuscles and of blood platelets should be repeated frequently in the course of prolonged treatment with streptomycin. Leukopenia and granulopenia should be considered as warning signs; the dose of the drug should be reduced and combined with 10 to 20 mg. of folic acid per day. The occurrence of purpura, abnormal bleeding or unusual pallor is suggestive of an agranulocytic syndrome which may be associated with a myelocytic marrow of the Rohr type. Streptomycin should be discontinued and treatment with transfusions, penicillin and folic acid substituted. Eosinophilia does not suggest an unfavorable prognosis.

Schweizerische medizinische Wochenschrift, Basel

78:729-752 (July 31) 1948. Partial Index

*Experiences in Treatment of Hodgkin's Disease and Leukemia with Nitrogen Mustards. A. Alder.—p. 729.

Experimental Study on Action of Dihydrotachysterol in Man and Dogs. R. S. Mach and P. Ducommun.—p. 732.

Technic of Transfusions and Intravenous Injections During Operations. H. Zbinden.—p. 743.

Quantitative Determination of Carbon Monoxide in Air. B. Souček. —p. 743.

Blood Cholesterol in Hypophysio-Diencephalic Disorders. H. Zondek, H. Leszinsky and Gerda Wolfsohn.—p. 746.

Nitrogen Mustards in Hodgkin's Disease and Leukemia.—Alder treated 8 patients with Hodgkin's disease and 2 with chronic myeloid leukemia. He preferred the direct injection to the infusion with sodium chloride and dextrose solution. He draws the desired quantity of the nitrogen mustard into a syringe of 20 cc. capacity and then draws up as much blood as possible. The mixture is then injected. Signs of irritation and painfulness of the veins were rare. A total of 50 to 60 mg. was given in the course of one series of treatments. The results obtained can be compared with those of roentgen irradiation, but the treatment with nitrogen mustard has the advantage that not only the irradiated but all lymph nodes are influenced. The temperature usually decreases to normal in eight to ten days after the onset of treatment. The leukocyte count of the blood rapidly decreases, but the leukopenia was never sufficiently severe to necessitate interruption of the treatment. Lymphocyte and granulocytes also show a decrease. Reduction in the size of the lymph nodes becomes evident in about a week. Recent enlargements decrease after three or four injections, but old ones with fibrotic and necrotic changes remain uninfluenced. The author is convinced that nitrogen mustard is a valuable addition to the therapeutic armamentarium.

Semaine des Hôpitaux de Paris

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*Bilateral Resection of Certain Prefrontal Cortical Areas (Topectomy). J. Le Beau.—p. 1937.

*Treatment of Anxiety States by Topectomy. J. Le Beau, M. Bouvet and M. Feld.—p. 1942.

*Treatment of Irreducible Pain by Topectomy. J. Le Beau, M. Bouvet and M. Rosier.—p. 1946.

Bilateral Resection of Certain Cortical Areas.—Le Beau treated 10 patients with anxiety states and 10 patients with irreducible pain by bilateral fractional resection of cortical areas. "Topectomy," a term coined in the United States for this operation, was practiced first by Pool in New York in 1947. Satisfactory results were obtained in these 2 series of patients by excision of Brodman's areas 9 and 10 and occasionally of area 46. Not more than 13 to 14 Gm. of substance should be excised. The areas 9 and 10 are connected with the medial thalamic nuclei, and area 9 is also connected with the nuclei of the septum of the preoptic region. The most important region is that of the junction of areas 9 and 10; a mechanism may therefore be considered in which the thalamic projection fibers act as intermediaries. Compared with frontal leukotomy, topectomy seems to have the advantages of avoiding deleterious alterations of personality and of intellect. There was much less disturbance of sphincter control than after lobotomy. The ablation of areas 9 and 10 seems to exert an elective action in reducing anxiety.

Topectomy for Anxiety States.—Le Beau and his co-workers treated 10 patients—5 adults, 4 men and 1 woman, between the ages of 25 and 48, and 5 children between 5 and 12 years, who had mental disturbances of anxiety type, by bilateral resection of area 9 and occasionally of area 10. Pool's operative principles were applied. All 10 patients operated on suffered from anxiety associated with brain lesions such as tumor, abscess, encephalitis and epilepsy. The results obtained were satisfactory except for the adult epileptics. The restlessness was allayed in all patients; aggressiveness was neutralized or attenuated. The intelligence was not reduced in any of the patients; the intervention was even followed by a pronounced progress of the intellectual development in one of the children with epilepsy. Not only did the restlessness subside, but the epileptic attacks failed to recur after the topectomy in children. The longest follow-up did not exceed fifteen months, so that the results must still await the test of time.

Treatment of Intractable Pain.—Le Beau and his co-workers treated 10 patients, 7 women and 3 men between the ages of 28 and 67 with facial and perineal neuralgias, by topectomy. In 5 of the patients the pain was definitely organic; 3 patients had anesthesia dolorosa, and 2 presented a chronic neuralgic condition with hypochondriac tendencies. The pain subsided in 9 patients; 1 patient continued to complain about pain, but no longer asked for morphine. The follow-up varied from two weeks to ten months. Topectomy practiced at the level of areas 9 and 10 did not cause any alterations of intellect or personality. It may be preferred to bilateral frontal leukotomy in surgery for intractable pain.

Book Notices

Treatise on Surgical Infections. By Frank Lamont Meleney, M.D., Associate Professor of Clinical Surgery, College of Physicians and Surgeons, Columbia University, New York. Oxford Medical Publications. Cloth. Price, $12. Pp. 713, with illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1948.

In addition to containing a digest of hundreds of contributions on surgical infections, this book is richly augmented by twenty years' experience of the author, who has been the foremost pioneer in surgical bacteriology in this country. One of the greatest attributes of the book is the excellent manner of presenting historical and fundamental data in a chronologic and practical way. The history of hospital gangrene from the Civil War days up to its conquest by a combination of chemotherapy and surgery is an example of masterful presentation which will give the young surgeon a thorough knowledge and background of these subjects.

The sources of operative wound contamination with proper emphasis on the throat and nose of operating room personnel are effectively presented. It is significant that after years of experience in surgical asepsis the author feels that preparation of the skin for operation, by soap, water, alcohol and ether, is not sufficient, but should be followed by application of 3½ per cent tincture, or an aqueous solution, of iodine. The splendid discussion of the various methods of sterilization with special emphasis on steam and the autoclave should be of great benefit to all operating room supervisors. Details of sterilization of air by the ultraviolet ray in the operating room are given. The author is apparently moderately in favor of this aid in prophylaxis of infection. Antisepsis and disinfection are adequately discussed by Dr. E. J. Pulaski, along with a complete description of the various agents used.

The various factors in operating technic, including gentleness, use of silk instead of surgical gut, proper ligation of vessels, are discussed in a splendid fashion. The results of the various teams appointed by the National Research Council to study infections and chemotherapy are presented; the most important data revealed that local application of sulfonamide drugs is ineffective in preventing development, but is effective in reducing the systemic effects, particularly the mortality rate. The two chapters containing 160 pages contributed by Balbina Johnson on the morphology and cultural characteristics of bacteria and methods for bacterial cultivation are excellent indeed.

Bacterial entrance into the human body and methods of spread are clearly described. The same can be said about bacterial synergism and bacterial antagonism. Appropriately, nearly 60 pages are devoted to a discussion of the various defenses or immunologic mechanisms; this is clearly written and should be readily understandable by recent medical graduates, which cannot be said of all discussions on immunity.

The first disappointment encountered was the 30 pages spent on a discussion of bacteriophage. If this book had been published before penicillin and the sulfonamide compounds were introduced that amount of space for this subject might have appeared justifiable.

The most serious defect in the entire book is found in the last chapter, which deals with antibiotic therapy in surgical infections, and contains only 40 pages, 28 of which are consumed by detailed case reports of the beneficial action of penicillin. Every physician has a variable number of cases representing triumphs of penicillin over previous methods of therapy including chemotherapy with sulfonamide drugs, but has a relatively poor conception as to the relative effectiveness in various conditions such as osteomyelitis, peritonitis, pylephlebitis, cholangitis and the numerous infections discussed in the case reports. It would have been much more informative if this space had been devoted to a discussion of results in various types of infection as influenced by various types of organism, stage of disease, etc. Such a summary is presented but consumes only one and a half pages; obviously, only gross facts now well known to all graduates of medical schools could be presented in this limited space. In this chapter on clinical discussion slightly less than two pages are devoted to streptomycin. The clinical discussion on bacitracin (a drug representing one of the many fine contributions by the author) is justifiably short, since this drug is not yet available to the medical public, although preliminary data on its effectiveness are encouraging.

Diagnostic et traitement des maladies de la colonne vertébrale. Par Jean Saidman. In two volumes. Cloth. Price, 4,750 francs. Pp. 1244, with 1324 illustrations. G. Doin and C^{ie}, 8 Place de l'Odéon, Paris 6^{e}, 1948.

In these two volumes of 1,244 pages the author has tried to present a comprehensive work on diseases of the vertebral column encompassing clinical examination and roentgen technic, interpretation and treatment. It is apparent that a vast amount of clinical material has been combed to present what is in effect an excellent radiologic treatise. If one were to evaluate the book as such it could be considered a most comprehensive and well illustrated work on the subject. Its value from this standpoint is enhanced by the clinical introduction to each chapter and the brief discussion of treatment. However, the orthopedic surgeon and student will find it notably deficient as to therapeutic procedures. This phase is covered in a brief and cursory manner. The illustrations are almost entirely devoted to roentgenograms and outline drawings illustrative of the roentgenographic pathologic changes. The author leans rather heavily toward physical therapy as the chief modality of treatment. Discussion of the orthopedic management falls far short of the mark both as to presentation and coverage of accepted principles as practiced in this country.

Altogether, this is an excellent book for the radiologist and for the orthopedic surgeon interested in a fine presentation of the roentgenographic aspects of vertebral disease.

Handbook of Psychiatry. By Winfred Overholser, A.B., M.D., Sc.D., Superintendent, Saint Elizabeths Hospital, Washington, D. C., and Winifred V. Richmond, B.S., A.M., Ph.D. Cloth. Price, $4. Pp. 252. J. B. Lippincott Co., 227-231 S. 6th St., Philadelphia 5, 1947.

This volume is a book on psychiatry intended essentially for the latiy, the nontechnical reader and the practitioner who needs a simple review and re-orientation on modern thinking in this specialty. It is written by two people of authority, in simple concise language which does not attempt the dramatic but which brings home the lesson well.

These authors review the breadth of the field of psychiatry from simple definitions through the gamut of adult psychiatry, child psychiatry, problems in peace and war and applications to the understanding of ordinary social and criminal behavior. It is amazing how much is encompassed in this short treatise; yet all of it done simply. The reader has a sense of having learned something without being "whipped-up" as is so often the case in books intended for lay consumption.

This is the kind of book that may well be recommended for its fundamental truths, its easy readibility and its storehouse of basic knowledge.

Economic Man in Relation to His Natural Environment. By C. Reinold Noyes. Volumes I and II. Cloth. Price, $15. Pp. 692; 695-1443, with 69 illustrations. Columbia University Press, 2960 Broadway, New York 27, 1948.

Mr. Noyes has attempted to synthesize the results of experimental medicine and psychology into a conceptual scheme of man, alone in the physical world. Before social sciences can become true sciences, Mr. Noyes holds, the social scientist must understand the biologic and physical background of man's social existence. Equally important is the adoption of the technic and methods of the established sciences.

The study is presented as step one of a proposed three part survey of man's economic life. After an understanding has been reached of man's physical existence, the second step would be an examination of the technical methods by which man has adapted himself to his environment. The third step would be an investigation of the social institutions which coordinate and direct the efforts of men.

The body of the study is a discussion of a wide range of physical and psychologic experiments, thoroughly documented in lengthy appendixes, which seek to explain the actions of human beings. Three conclusions are reached as to the fundamental motivation of man. First is the view, also held by many biologists, that organisms are not reaction mechanisms which merely respond to external stimulation. Rather they are "more or less elaborate complexes of processes, in any one of which variations from homeostasis set up corrective balancing responses" (p. 995). Man's integrated behavior stems primarily from these variations. The source of excitation is outside the brain, but the continuous interrelation of the brain and the outside forces is a much more vital one than that of mere external sensory stimuli to an organism.

The second conclusion, which proceeds from the first, is that some organisms—chiefly man—exhibit integrated behavior in the absence of immediate external stimuli. This implies that such behavior is initiated from a secondary source in the brain itself. In this type of behavior memory and volition are essential.

The third conclusion is what Mr. Noyes believes to be the major contribution of his study. He states that the fundamental fact of man's relation to his environment appears to be that nature imposes obstacles to man's efforts to satisfy his wants and that the value of a particular object is how much effort a man is willing to expend to obtain it. This idea of value is in sharp contrast to the classical economist's theory that utility and scarcity create value.

If the components of the means required to satisfy a want could be measured quantitatively, it would be possible to establish a whole new scheme of analyzing economic life. This measurement, however, would require the definition of the criteria by which a want is judged; then the "real" cost of any effort could be recorded in quantitative terms. At this point in the synthesis Mr. Noyes is faced with the same dilemma as has brought previous social scientists to a halt in their search for an exact social science. In the definition of the criteria for judging a specific want, the necessary inconsistencies, and immeasurability and incomparability of many of the magnitudes of the means, make it impossible to assign definite values. Furthermore, the choice of means which man will take to satisfy his wants cannot be determined in advance.

Not much material in this book is directly pertinent to the practice of medicine.

Diseases of Poultry with Specialist Chapters on Poultry Husbandry. By W. P. Blount, Ph.D., F.R.C.V.S., F.R.S.E., Major, Royal Army Veterinary Corps, and various contributors. Cloth. Price, $6. Pp. 562, with 116 illustrations. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1947.

Twenty-four contributors from many different countries emphasize the part that the veterinary profession has taken in the poultry industry. Certain diseases of poultry are capable of infecting man, and these are of interest to the physician. Psittacosis, tuberculosis, encephalomyelitis, listerellosis, salmonella infections and swine erysipelas are discussed in more or less detail. The author believes that poultry are of little significance in the epidemiology of brucellosis, which is at variance with the experience of investgators in the United States. Exception will also be taken to the statement that limberneck (botulism) in poultry is fairly common in the United States because of feeding the contents of "blown" cans of foodstuffs to poultry. Nearly thirty years ago, the commercial canning industry solved the botulism problem in this country.

The book, as a whole, makes a valuable contribution to poultry husbandry.

The Yearbook of Psychoanalysis. Vol. III, 1947. Managing Editor: Sandor Lorand, M.D. Editorial Board: Henry Alden Bunker, M.D., Ernest Jones, M.D., Bertram D. Lewin, M.D. and C. P. Oberndorf, M.D. [Reprints]. Fabrikoid. Price, $7.50. Pp. 309. International Universities Press, 227 W. 13th St., New York 11, 1948.

This book represents the third volume of a collection of psychoanalytic papers chosen by the editors as suitable for publication in a "Yearbook." As has been previously noted by at least one reviewer, no reasons are given for the particular choice of selection. There are twenty articles in the present volume with an additional page entitled, "Selected Reading," but here again no explanation is made as to why the particular productions listed were chosen. Most of the articles are well written. They cover the psychoanalytic approach to various fields from the opening paper regarding Freud's place in the history of science and a previously unknown (here reprinted) article entitled, "An Unknown Autobiographical Fragment by Freud," through investigation in melancholia and other types of depression, compulsion neuroses and obsessional ritual to the development in the theory and practice of psychoanalytic technic, mental and physical origins of behavior and modern concepts regarding war neuroses. This book is recommended primarily to psychoanalysts and advanced students of psychoanalysis. It is not recommended reading for the general public or even the medical profession in general because the material chosen is too technical and will not interest many physicians with the exception of those indicated. Nothing relating to psychosomatic problems or research has been incorporated in this issue.

Diagnosis in Daily Practice: An Office Routine Based on the Incidence of Various Diseases. By Benjamin V. White, M.D., Assistant Clinical Profesor of Medicine, Yale University School of Medicine, New Haven, Conn., and Charles F. Geschickter, M.D., Professor of Pathology, Georgetown University Medical School, Washington, D. C., Fabrikoid. Price, $15. Pp. 693, with 360 illustrations. J. B. Lippincott Co., E. Washington Square, Philadelphia 5, 1947.

This unique text should have an appeal to interns, residents and practitioners. Part one, on "The Diagnostic Survey," is designed to give the reader an idea of the probability factor in diagnosis. Unfortunately, this is not especially valuable in individual cases. Part two deals with the differential diagnosis of presenting symptoms as related to the various systems. Part three is an essay on physical diagnosis, while part four embodies common laboratory procedures. In part five, which constitutes one half the book, the diagnosis of various diseases according to systems of the body is dealt with. The book is replete with excellent photographs and drawings. There are many tabulations that make for easy reference.

The Microscope: Its Theory and Applications. By J. H. Wredden, F.R.M.S. With an historical introduction by W. E. Watson-Baker, A.Inst.P., F.L.S., F.R.M.S. Cloth. Price, $5.50. Pp. 296, with 298 illustrations. Grune & Stratton, 381 Fourth Ave., New York 16, 1948.

A book on the microscope and its use is a welcome addition to the literature. However, the author, who had most of his experience in connection with industrial microscopy, does not meet the needs for an adequate treatise on medical microscopy. The illustrations are of old models and not of up-to-date instruments. Many of them are made from English instruments with which the American physician and microscopist is not acquainted.

The discussion of the fundamental principles of the optics involved, of illumination, is technical and adequate. One chapter contains practical suggestions on the proper use and application of the microscope. The polarizing microscope and micrometry are discussed in separate chapters. Another chapter is devoted to photomicrography, largely as it is employed in industry. Similarly, the two chapters on preparation of specimens for microscopy is written for biologists and physicists rather than for medical workers.

This volume may be of interest to certain fields of microscopy but falls short in its practical application in clinical pathology and allied medical fields.

Radium Dosage: The Manchester System. Edited by W. J. Meredith, M.Sc., F.Inst.P. Compiled from articles by Ralston Paterson, M.D., F.R.C.S., F.F.R., and others. Cloth. Price, $4.50. Pp. 124, with 42 illustrations. Willams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1947.

"Radium Dosage," by Meredith, is a detailed presentation from the Manchester group of its system of radiation therapy. Particular reference is made to procedures for calculation of dose. The material is exceedingly complete and highly technical, exceeding considerably in its precision the predictability of location of the disease to be treated.

This work is a tribute to the patience and thoroughness of the Manchester School of Radiation Therapy, as well as to the clinical applicability of biophysics to therapy.

Las enfermedades mentales en Cuba: Estudio estadístico. Por el Dr. José Angel Bustamante. Paper. Pp. 199, with illustrations. Tamayo y Cia, Habana, [1948].

This little book contains statistics on mental diseases in Cuba, concerning 3,449 patients, mainly white persons at the Mazorra Department of the Calixto García Hospital. These statistics enable one to evaluate the progress of psychiatry in Cuba. The carefully prepared statistics represent a national contribution of importance in the field of mental diseases.

Queries and Minor Notes

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

BASIC METABOLISM AND SURFACE AREA

To the Editor:—Please furnish data on basal metabolic studies in relation to surface area, particularly as to corrections, if any, that are to be made because of this factor.

Louis Miller, M.D., New York.

ANSWER.—Clinically the basal metabolic rate is expressed as a percentage above and below the theoretic normal standard for the individual, taking into account his sex, age, height and weight. The basal metabolism is most closely related to the surface area and is less directly related to height or weight. The surface area can be calculated from the following formula if the height and weight are known (Du Bois): $A = W^{0.425} \times H^{0.725} \times 71.84$, where A is the surface area in square centimeters, W the weight in kilograms and H the height in centimeters.

In the average man of normal average build at the age of 25, about 40 calories are given off every hour per square meter of body surface; in the woman about 36 calories. The surface area of an average adult is about 1.8 square meters. The basal metabolic rate varies greatly with age, being considerably higher per square meter of surface area in children than in adults. There is a gradual fall in the metabolic rate as age advances. These facts are well shown in the following table:

	B. M. R. in Calories per Sq. M. per Hour	
Age in Years	Male	Female
2	57.0	52.5
6	53.0	50.6
8	51.8	47.0
10	48.5	45.9
16	45.7	38.8
20	41.4	36.1
30	39.3	35.7
40	38.0	35.7
50	36.7	34.0
60	35.5	32.6

The figures given for metabolic rate are average normal values; average implies that higher and lower values do occur. It is generally accepted that the normal range of metabolism in persons of identical physical status may vary from plus 10 per cent to minus 10 per cent commonly, and rarely by as much as plus or minus 20 per cent.

ALCOHOLIC ANTIFREEZE FLUIDS

To the Editor:—A patient gives the history of losing consciousness on inhaling fumes coming from a leak in an automobile heating line. The radiator contained alcohol antifreeze at the time. Can radiator alcohol cause syncope?

Anthony C. Yerkovich, M.D., Lackawanna, N. Y.

ANSWER.—Alcoholic antifreeze fluids for automobiles are likely to represent methanol, a mixture of methanol and isopropyl, or completely denatured ethyl alcohol. No constituent under the ordinary conditions of automobile heater leaks may be expected to lead to unconsciousness or any severe systemic disturbance. In automobile manufacture at the end of the final assembly line and subsequent inspection work, during cold months, a number of workmen continually fill and drain radiators requiring antifreeze. At times spillage is high. No difficulty arises, and none is expected. Instead, the possibility of carbon monoxide exposure should be explored. Having ruled out carbon monoxide, one might direct attention to exquisite intolerance for antifreeze alcohols and to functional disturbances. The odors of antifreeze fluids while organically harmless, provoke emotional responses in some susceptible persons. Offensive odors may serve as the trigger for convulsive states wholly unrelated to any direct chemical action.

ENCEPHALITIS IMMUNIZATION

To the Editor:—Is there an immunizing vaccine against encephalitis? A patient going to Japan is apprehensive.

Harold B. Keyes, M.D., New York.

ANSWER.—Immunization against the Japanese type of encephalitis is still in the stage of animal experimentation and has not been applied to human beings.

EYE DISABILITY RATINGS

To the Editor:—I wish you would settle a controversy, and, if necessary, give us authority for changing a figure in the "Schedule of Disability Ratings—1945" of the Veterans Administration. This book, our "bible" of disability ratings, mentions that the Industrial Motor Field Chart, made up of 20 squares, each 8⅜ by 10½ inches (21.3 by 26.7 cm.), should be used at a distance of 10 feet (304.8 cm.). This has never seemed right to me. Dr. Albert C. Snell, in his "Treatise on Medicolegal Ophthalmology," 1940 edition, stated that each square should subtend an arc of 20 by 25 degrees. Such an arc is subtended on our Industrial Motor Field Chart, each square being 8¾ by 10½ inches (22.2 by 26.7 cm.) at 2½ feet instead of 10 feet (304.8 cm.). I wish that you would send us an official letter stating the exact distance for testing binocular fixation in which each little rectangle measures 8¾ by 10½ inches. This is a matter of great importance as far as the Veterans Administration compensations are concerned.

Karl D. MacMillan, M.D., Pittsburgh.

ANSWER.—The American Medical Association Industrial Motor Chart is intended to explore a motor field of 20 degrees horizontally and vertically. It is divided into 20 small rectangles 4 by 5 degrees each, to provide a larger (12 degree) motor field below the primary position and a smaller (only 8 degree) motor field above the primary position, and 10 degrees on both sides of it. The dimensions of a 5 by 4 degree rectangle at 10 feet correspond to 10½ by 8⅖ inches (not 8¾ inches). If it is desired to use this chart at 2½ feet the rectangles would have to be reduced to one fourth of these dimensions.

SPECIFIC GRAVITY OF BACTERIA

To the Editor:—What is the specific gravity of the tubercle bacillus?

L. W. Garst, M.D., Catawba Sanatorium, Va.

ANSWER.—Specific gravity determinations of bacteria are not entirely satisfactory because of a number of variables. Such factors as the water content, conditions under which the bacteria are cultured, age of the bacteria, the proportions of such substances as carbohydrates and proteins with specific weight greater than that of water in proportion to light substances, such as fat, account for differences in specific gravity, as well as other factors which can influence all of the physical and cultural characteristics of bacteria. In discussions on this subject tubercle bacilli are usually grouped with those organisms having specific gravity varying from 1.09 to 1.13. An authentic source of information on this subject is: "Bacterial Chemistry and Physiology," by Porter, published by John Wiley & Sons, Inc., New York.

Hr INCOMPATIBILITY

To the Editor:—A patient aged 33, tripara, trigravida, is anxious to have more children. She is Rh positive; her husband is Rh negative. The first two pregnancies were uneventful. About three weeks from term in the third pregnancy eclampsia developed, but she responded to treatment and labor was induced. The toxemic symptoms cleared rapidly, and within four weeks of delivery the patient was normal in all respects. The baby showed signs of distress both before and during labor but survived. The vernix caseosa was stained a deep yellow, but the baby showed no jaundice at any time and is a normal healthy child. Close questioning later revealed that toxemic symptoms had developed about three days prior to the onset of the eclampsia and that for several days before this the patient had eaten large amounts of ham. Would there be any contraindications to future pregnancies on the basis of this history or the Rh factors?

M.D., New Mexico.

ANSWER.—An Rh-positive wife of an Rh-negative man is extremely unlikely to have a baby affected with erythroblastosis due to Rh incompatibility. It would have to be caused by so-called Hr incompatibility—a rare occurrence. Therefore there is no contraindication to future pregnancies on the basis of the Rh factor.

SHORT WAVE DIATHERMY

To the Editor:—I advised a patient to take some short wave treatments for an arthritic condition, and subsequently she went to an orthopedist who cautioned her against short wave treatments, claiming that they dried up the tissues. Please discuss the value of short wave treatments in relation to chronic inflammatory conditions of muscle, joint and nerve.

M.D., New York.

ANSWER.—Short wave diathermy is a valuable type of electrotherapy but is not to be recommended to the exclusion of other thermotherapeutic measures. When it is properly used, "drying up of the tissues" does not result. Short wave diathermy is produced (by means of a vacuum tube oscillator) by an oscillating electric current of a relatively high frequency (from 10,000 kilocycles per second at a wavelength of 30 meters to 100,000 kilocycles per second at a wavelength of 3 meters). Frequencies greater than 10,000 kilocycles per second provide heating without undesirable nonthermal effects. Resistance to the current offered by the tissues is the means by which heating is accomplished.

To obtain clinically useful thermotherapeutic effects in a specific area and at the same time to avoid undue heating of the overlying skin insulation by pads or air spacing between the electrode and the body surface is standard practice. In areas where normal circulation prevails and sufficient soft tissue is present, uniform heating to a depth of 5 cm. (2 inches) may be anticipated.

All the substantiated benefits attributed to use of short wave diathermy can be adequately explained by physiologic effects of heating. When it is properly applied, continued exposure to short wave diathermy has been shown not to produce specific inflammatory reactions or other untoward effects on bodily tissues.

Short wave diathermy is indicated when active hyperemia is desired. Its deeper penetration constitutes the principal advantage of short wave diathermy over most other types of heating. Thus for "chronic inflammatory conditions of muscle, joint and nerve" this method of heating often is useful; however, simpler forms of heating may be equally effective for many superficial lesions of the soft tissue.

It is not always possible to treat widespread areas by a single application of short wave diathermy; the apparatus can be dangerous if not properly used, and it is rarely adaptable to home use. Use of short wave diathermy is contraindicated in regions where circulation or sensation is impaired or the danger of hemorrhage exists, in the presence of profusely draining wounds or when metal approximates skin or deeper structures likely to be within the range of the short wave diathermy.

MACULAR DEGENERATION

To the Editor:—Please give information on the muscular implantation of crystals of methyl testosterone or other orchic substance. A patient, aged 56, has previously had it used for macular degeneration of the eye with improvement.

Lester L. Graves, M.D., East Pepperell, Mass.

Answer.—Macular degeneration in older persons is due, in general, to sclerosis and hyaline degeneration of the choroidal circulation nourishing the macular region. Treatment of the condition is unsatisfactory because of the low vitality of the retina, which does not respond to therapeutic or stimulative measures. Testosterone is a form of substitution therapy and its use is not indicated when the gonads are functional. A review of the titles in the *Quarterly Cumulative Index Medicus* the past five years does not give any reference to this therapy in macular degeneration. The indications and contraindications to therapy with the male sex hormones are well discussed by Werner. (J. A. M. A. **132**:185, 1946).

CHRONIC SINUSITIS

To the Editor:—Please supply information on the following subjects: (1) What is the best present treatment for chronic infection of the perinasal sinuses? (2) What drug is recommended for topical anesthesia of the ear drum when a myringotomy has to be performed as a home or office procedure?

M.D., Maryland.

Answer.—Before outlining treatment for so-called chronic sinusitis, it would be best to define what is meant by the term. In general, the feeling today is that the larger number of cases of so-called chronic sinusitis are really instances of allergic sinusitis accompanied with secondary suppuration. The presence of the first condition makes it difficult for the second one to heal and requires a careful study for the detection of the agents producing the allergic state. This may mean the use of elimination diets, the creation of relatively dust-free bedrooms and careful cutaneous testing to determine which allergens, especially in food, one must avoid and in which cases immunity may be produced by injections of the offending agent.

The patients frequently complain of nasal obstruction and secretion, brought on by sudden changes in temperature. They may suffer from other allergies, especially the seasonal (pollen and mold) types. They have on occasion bouts of sneezing, watery nasal discharge and vague headaches. Cytologic examination of nasal secretion reveals many eosinophils, often in clumps. The nasal mucosa is often pale, though it may be red: frequently it is waterlogged. Polyps may be present, especially in the ethmoid area and roentgen examination reveals cloudiness and mucosal thickness in nearly all of the sinuses.

The onset of a "cold" or mild inflammatory rhinitis in the described situation manifestly finds the course protracted, especially because the ostiums of the various sinuses are blocked by swollen mucosa.

Diagnosis of the underlying allergic causes and their removal, use of effective antihistaminics and the occasional necessary removal of polyps that obstruct the drainage will aid greatly in amelioration of a condition which by its nature can, in the worst cases, never be completely relieved and is prone to frequent exacerbations and recurrences.

Chronic suppurative sinusitis, unaccompanied with nasal allergy, seldom involves all or nearly all of the sinuses on one or both sides of the nose. The antrum on one side, as a rule, is the offending area about 95 per cent of the time, with the frontal sinus sinus next in frequency. The patients often complain of little more than postnasal dripping. Their relatives and friends complain oftener of a foul odor to the breath than does the patient himself, and headaches and pain are not prominent symptoms, except at times of acute exacerbation.

Irrigation of such an involved antrum reveals often thick yellow or green pus with a pronounced odor. The condition sometimes responds quickly to irrigation; often instillation, after irrigation, of sulfathiazol in a suspension, in water or in a vasoconstrictor solution, is helpful. Many today dispense with irrigation and use the methods advocated by Proetz and Parkinson.

A reasonable attempt at the aforementioned treatment with failure should be followed by the performance of an antrum window operation. If this fails, as it does on occasion, then it should be followed by the more radical so-called Caldwell-Luc procedure. Any involved teeth with a persistent infection should, of course, be treated.

Bonain's solution (equal parts of cocaine, menthol and phenol) is the most commonly used topical analgesic. With the patient reclining and the affected side uppermost, a few drops of the preparation dropped into the canal and allowed to remain in contact with the membrana tympani for a few minutes produces a moderately satisfactory anesthesia. The phenol is in all probability the active agent, and a 30 per cent solution of phenol in glycerine would in all likelihood be equally as effective as Bonain's solution.

"BLISTERBUG"

To the Editor:—A 9 month old boy put an insect called a "blisterbug" in his mouth. His mother succeeded in extricating one wing and the head of the insect. The rest was swallowed. About twelve hours later the child vomited and brought up the insect. The child acted as though he had intestinal cramps. About twenty-four hours after the ingestion of the insect, it was noted that his urine stained the diapers pink. About thirty-six hours after the bug was eaten, the urine was no longer macroscopically hematuric, but contained innumerable red blood cells in the uncentrifuged microscopic specimen. Otherwise the child appeared healthy. About one week ago he was "bitten," or otherwise contacted, by a "blisterbug," and a "huge blister" developed at the site of the contact, according to the parents. We wonder whether such hematuria after contact with blisterbugs, especially mucous membrane contact, has been observed before, and what is known about its mechanism.

Heinrich Lamm, M.D., La Feria, Texas.

Answer.—The so-called blisterbug is not a bug but a beetle and not one beetle but any one of a group or family, Meloidae. This family includes the "Spanish fly," Cantharis vesicatoria. Cantharidin is produced from certain species of this family and seems to be the active principle. Some members of the family Staphylinidae (rove beetles) also cause urticaria and blistering. The active principle here is similar to cantharidin but slow in action. In all the urticating properties are in the body fluid. Accidental crushing of a beetle on the skin causes vesication, which can be distinguished from a bite or sting by absence of a puncture mark. Other beetles which cause blistering have been reported, as a night-flying beetle of the family Paussidae (in South East Africa), and at least two sessinid (coconut) beetles of the family Oedemeridae in certain Pacific islands, and Eobia of the same family. These cause burning pain on contact with the body fluid and a fairly harmless large vesicle. Mucosal irritation of the nose and eyes is caused by a gaseous product of the small flour beetle, Tribolium confusum.

Infection of man with beetles has been reported at any stage of their development and is called canthariasis. The location may be intestinal, urinary, ocular, dermal or nasal. While rare, intestinal canthariasis is credited with causing severe diarrhea in children in Ceylon.

In treatment, no drug is available which counteracts the vesicating symptoms. Mild alkaline lotions are recommended and a compress of saturated magnesium sulfate solution may be applied. Avoidance of these beetles is the sure preventive. Entomologic control is possible where they are numerous in fields and forage crops by the use of arsenic sprays and methods applicable to grasshopper control.

Blister beetles have been the subject of numerous reports. The general treatment is symptomatic and supportive. Swartz and Wanamaker (J. A. M. A. **131**:594 [June 15] 1946) stated that "more than 200 species of blister beetles have been found in the United States." They described one, Epicauta cinerea, which may crawl harmlessly on the skin but when pressed by clothing or irritated exudes an irritant fluid which causes blistering in twenty-four hours. Opening the blisters and application of mild antiseptics results in healing without scarring in ten days. A case of intestinal canthariasis due to Tenebrio molitor (meal worm) was reported by Palmer (*J. Parasitol.* **32**:54 [Feb.] 1946) in a child of 4 months. Within the past three years no report has been found of hematuria as a result of blister beetle contact.

BASAL METABOLISM IN LIVER DISEASE

To the Editor:—I have been unable to find any references to basal metabolic rates in conditions associated with hepatic damage. I have been informed that theoretically the basal metabolic rate should be elevated in hepatitis and in conditions associated with hepatic damage. Please clarify this point. Please give references.

Benjamin H. Archer, M.D., New York.

ANSWER.—Basal metabolic rates usually fall within normal limits in parenchymatous hepatic disease, as Aub and Means (*Arch. Int. Med.* **28**:173-191, 1921) demonstrated. An occasional patient, however, presents an elevated rate of the order of magnitude of about plus 25 per cent. This phenomenon has received little attention and is barely mentioned in medical literature. Eppinger noted it in his celebrated monograph (Die Leberkrankheiten, Julius Springer, 1937) but did not explain it. To date, no adequate explanation for the occasional elevation in the metabolic rate in hepatic disease can be offered. Some evidence seems to indicate that it is not due to protein catabolism or acceleration of the specific dynamic action of foodstuffs. In several cases of hepatic disease in which the basal metabolic rate was high, which were studied in one metabolic clinic, there was no evidence whatever of hyperthyroidism. The suggestion has been made that the diseased liver, which is known to lose its capacity to inactivate estrogenic compounds, may similarly fail to deal with compounds originating in the thyroid. No proof of this hypothesis is available at present.

BLINDNESS FOLLOWING HEMORRHAGE

To the Editor:—A white man, aged 52, had severe bilateral atrophy of both optic nerves in 1919. This he attributes to severe diarrhea and hemorrhage, during which he became totally unconscious. The condition developed at Spalato, Jugoslavia, on the Adriatic Sea, in the spring of 1919. He remains blind at this time. Could the blindness be due to pronounced anemia following the hemorrhage and diarrhea?

Joseph J. Hanus, M.D., Austin, Texas.

ANSWER.—Blindness after exsanguination or general collapse is a rare but well known clinical catastrophe. The pathogenesis is retinal ischemia, which determines a noninflammatory degeneration of the ganglion cells and their fibers and sequential optic atrophy. Amaurosis has been noted in the collapse stage of cholera and typhus, but more frequently after recurrent profuse hemorrhages complicating medical conditions such as peptic ulcer, pulmonary tuberculosis, parturition and epistaxis and rarely from wounds and surgical treatment. The blindness is usually, but not necessarily, bilateral, occurs within the first week or two after the hemorrhages and is permanent in half the patients affected. The pupil is always fixed and dilated. The ophthalmoscope shows attenuated vessels, a pale disk and occasionally retinal hemorrhages or fluffy patches of edema. Cerebral ischemia is sometimes also evident, as manifested by sensory and motor anomalies, aphasia, deafness, amnesia, nystagmus and polyneuritis. The logical treatment is prompt transfusion and repeated paracenteses of the cornea.

STERILITY FROM HEAT

To the Editor:—Is it possible to cause sterility in the male by the use of diathermy induced through an orificial electrode, thus causing a temperature elevation in the region of the prostate gland and transference of heat to the testicles?

M.D., Ohio.

ANSWER.—Evidence from various sources shows that heat can easily damage the testicles. Febrile diseases in men sometimes cause pronounced deterioration in the quality of the semen. In laboratory animals even moderate heat applied to the scrotum leads to degeneration of the seminiferous tubules. The poor functioning of undescended testicles is probably due in part to their abnormally warm environment in the groin. Rams have been rendered sterile by the wearing of a red flannel suspensory bandage. In spite of this remarkable sensitivity of the testicles to heat, it seems unlikely that diathermy applied to the prostate through an orificial electrode would produce enough temperature elevation in the scrotum to do any harm. I know of nothing in the literature on this subject.

INFECTIOUS MONONUCLEOSIS

To the Editor:—A patient 23 years of age has swollen glands in the left side of his neck. By blood smear the disease has been diagnosed as acute infectious mononucleosis. Are there authentic reports of specific remedies for this disease? The patient has only a slight fever but is apprehensive.

Francis M. Findlay, M.D., Kingman, Ariz.

ANSWER.—Infectious mononucleosis is thought to be caused by a virus. Penicillin, streptomycin and sulfonamide drugs are of no value in this disease unless there is a secondary bacterial infection. Lassen and Thomsen (*Acta Med. Scandinav.* **104**:498, 1940) used specific convalescent serum in 12 patients with a severe form of infectious mononucleosis. Serum was obtained from convalescent patients within two weeks after their fever subsided and was given intravenously in doses varying from 50 cc. to 300 cc. Objective improvement within twenty-four hours was noted in 11 patients and subjective improvement occurred in all. Nine patients became afebrile within forty-eight hours. In most patients with infectious mononucleosis the disease runs a benign course and requires no specific treatment. If convalescent serum can be obtained, it deserves trial in the occasional case of severe disease.

POSTMASTECTOMY LYMPHEDEMA

To the Editor:—What can be done to relieve lymphedema following radical mastectomy? Edema did not follow the operative procedure immediately but came on three months later. Evidence of recurrence in the scar or in the axilla is absent. The patient had postoperative roentgen therapy.

M.D., New York.

ANSWER.—The treatment of lymphedema following radical mastectomy has been found to be most discouraging. Elevation of the involved arm to a horizontal position for as much of the time as possible, together with gentle massage of the arm from the wrist toward the shoulder, have reduced the swelling in some instances. Modified Kondoleon operations or attempts to establish lymphatic drainage by inserting a subcutaneous thread have had disappointing results. The condition is most likely to occur in obese persons. Perhaps the best treatment would be an attempt to avoid the situation by meticulous dissection during the operation, with particular attention paid the cephalic and subscapular vessels which should be preserved. In the absence of definite evidence of recurrence of the malignant process, roentgen treatment is to be avoided, as this may have a tendency to aggravate the condition.

MONILIA ALBICANS

To the Editor:—What is the preferred treatment of pulmonary moniliasis? Is the insufflation or inhalation of ethyl iodide useful? Culture from bronchoscopic aspiration shows Monilia albicans.

Clifford H. Kalb, M.D., Milwaukee.

ANSWER.—Specific therapy is not available. It is difficult to see how ethyl iodide could be useful. Since moniliasis is often a secondary infection, search should be made for some possible underlying disease, like tuberculosis or carcinoma. Treatment is symptomatic and supportive. It would be important to know whether Monilia cells are present in great numbers or not present in the sputum. Certain persons harbor Monilia normally as saprophytes. The organisms may not be the cause of the disease in question.

VOCAL CORD PARALYSIS

To the Editor:—I noticed in The Journal of Sept. 4, page 103, your answer to the question of Dr. Harry Boatwright, Kingsport, Tenn., regarding a left vocal cord paralysis. In the answer it is stated that not more than 5 per cent of the patients will regain function. I call attention to the work we have been doing at the Post-Graduate Hospital in New York during the past ten years in regard to treatment of this condition. In our material, which comprises about 100 cases, the recovery rate is about 70 per cent with electrotherapy. Our material is now in the process of compilation for publication. In the meantime, may I refer you to an article by Dr. Charles Gordon Heyd (*New York State J. Med.* **44**:17 [Sept.] 1944), in which our technic is described. Further references to our method are found in the *Journal of Nervous and Mental Diseases* (**98**:183 [Aug.] 1943) and in the *Annals of Surgery* (Weeks, C., and Hinton, J. W.: Extralaryngeal Division of the Recurrent Laryngeal Nerve, **116**:251 [Aug.] 1942).

Charles O. Fiertz, M.D.

COLA AND ASPIRIN

To the Editor:—In reference to the query, "Cola and Aspirin" (The Journal, July 3, 1948), may I state that the caffeine content of coca-cola does not exceed 40 mg. per bottle and is uniform everywhere in the world.

W. P. Heath, Vice President,
Chemical Control, The Coca-Cola Co., New York.

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SACRIFICE OF BONE LENGTH IN RECONSTRUCTION PROCEDURES

Chairman's Address

J. WARREN WHITE, M.D.
Greenville, S. C.

At the risk of criticism from the perfectionist, I have chosen for his formal discourse a basic principle which, to my knowledge at least, has never before been discussed as an entity in traumatic or orthopedic reconstruction operations.

As some of you will appreciate, in enumerating examples of this principle, the shortening procedures about to be discussed have long been employed by me. I have advocated in several papers technics which I hope have justified their being published in spite of their occasional glaring anatomic compromises.[1]

Oliver Wendell Holmes has given us an anecdote about Benjamin Franklin which seems appropriate for this occasion. Franklin, early in his career, apprenticed to his brother as a printer's devil; one day in going down a steep stairway into the low studded basement beneath the print shop hit his head painfully against the ceiling when he did not stoop enough. His brother who was immediately preceding him into the cellar warned him about holding his head too high, saying that in so doing many a blow would be received in life which by stooping a little could have been avoided. We all must realize the difficulty of attainment in our surgical technics and restrict our activities to that which is within our own capabilities and which can be accomplished with less risk for the moment as well as for the ultimate good of the patient.

Surgery to a greater extent than medicine is associated with risk even in the routine care of patients. Surgical disasters can usually be more definitely traced to the surgeon than medical failures to a physician. No surgical operation has ever been performed that did not carry with it some degree of risk. It is the purpose of this paper, therefore, to discuss certain surgical ways and means to get the best final result for the patient and avoid exposing him to unjustified hazards.

The basic principle to be discussed is the sacrifice of structural length for the purpose of getting safer, surer and speedier results in the treatment of appropriate major deformities. Various typical examples of this surgical reconstruction entity will be cited in this paper. Only five general headings have been listed, though doubtless more could be added.

LEG LENGTHENING

Over 20 years ago I began my work in South Carolina, just after Abbott[2] had perfected the leg-lengthening technic originally advocated by Codavilla in Italy, and naturally employed it on several occasions. It was not long before I realized that I was applying tremendous force in stretching out resistant soft tissues, usually in an already physically damaged limb. The result seldom justified the effort employed. No serious disasters were experienced, but the alternative procedure, i. e., the shortening of the long leg, was resorted to with much more enthusiasm and has, with a few exceptions, been employed ever since in problems of discrepancy in leg length.[1a]

The same conservative sentiment about leg lengthenings has gradually developed over the country, and in spite of the anatomic advantage (the increasing of the height of the patient) few leg lengthenings apparently are being done at the present time.

LEG SHORTENING

Since the time my article on shortening femurs was published thirteen years ago,[1a] the simpler leg shortening procedures have largely displaced the more hazardous lengthenings, for the reasons previously mentioned as well as other arguments enumerated in the article already cited.

After years of observation, I have come to the conclusion that most persons so afflicted readily accommodate themselves to minor discrepancies in leg length and that only in the severer cases is there any definite need for equalization. I feel that during these days of intensive interest in low back pain, too much emphasis has been placed on a minor length discrepancy as an etiologic factor.

Fortunately even this shortening operation, which must still be considered a major procedure, has been largely superseded in children by a relatively minor one, which arrests the growth of one or more of the long bones of the long leg. This valuable idea was conceived by Phemister, next year's president of the American College of Surgeons, who also devised an operative technic which subsequently was simplified and made more certain in his estimation by a procedure published by me twelve years ago.[1c]

Read before the Section on Orthopedic Surgery at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

[1] (*a*) White, J. W.: Femoral Shortening for Equalization of Leg Length, J. Bone & Joint Surg. **17:** 597 (July) 1935; (*b*) Carpectomy for Intractable Flexion Deformities of the Wrist, ibid. **26:** 131 (Jan.) 1944. (*c*) White, J. W., and Warner, W. P., Jr.: Experiences with Metaphyseal Growth Arrests, South. M. J. **31:** 411 (April) 1938.

[2] Abbott, L. C.: The Operative Lengthening of the Tibia and Fibula, J. Bone & Joint Surg. **9:** 128 (Jan.) 1927.

A third exemplification of the value of the shortening idea is employed in severe Volkmann ischemic contractures following severe elbow or forearm injuries.[1b] The removal of the entire carpus gives enough soft tissue slack to allow adequate correction of even the severest wrist flexion deformities. In examining the opposing surfaces of the distal end of the radius and the proximal end of the metacarpals, it looks almost as though they were designed for this procedure.

Here again this operation was designed as a last resort for intractable deformities and was advocated in the original article written seven years ago largely for esthetic reasons. Much improvement in the function of the remaining uninvolved musculature has been noted over the years subsequent to operation, which therefore is now being done more frequently in cases that could not be considered as presenting last resort problems. The Steindler operation or forearm shortening procedure advocated for this condition has not been successful in my hands and apparently does not give the slack at the wrist where it is needed.

In my estimation the fourth most important shortening procedure is the sacrificing of length at the ends of long bones, particularly the forearm and lower leg.

The most frequent instance of this is my modification of the Mayo-Heuter hallux valgus operation.[3] Here the length of the first metatarsal is sacrificed to allow the toe to be straightened, held in a valgus position by various overly contracting tendons which act like the string of a bow. In addition to facilitating the correction of the deformity, the actual shortening of the toe, not enough (i. e., the shortening) to be a deformity in itself, serves to prevent its recurrence.

Another relatively frequent instance of bone end excision is the removal of the distal end of the ulna, where, in severe comminuted fractures of the distal end of the radius, or growth disturbance, an unavoidable shortening has resulted in an embarrassed functional and anatomic deformity.

In congenital deformities, such as short or even absent radii, the sacrifice of enough length of the ulna to correct the severe valgus position of the hand and to get good apposition between the distal end of the ulna and the carpus is of real value.

Mumford's[4] excision of the distal end of the clavicle for persistent acromioclavicular dislocations is another instance of the value of the excision of a long bone end.

Smith-Petersen[5] calls attention to the advantage of excising the distal end of the acromion process to relieve supraspinatus pain and improve motion, a procedure which I have not done but which appears logical.

In defects of the tibia, including nonunion, the projecting proximal end of the fibula not infrequently constitutes a real problem, which can be solved by the excision of an amount that appears desirable to allow closure of the defect and positive end to end presure.

Shortening in many other arthroplastic procedures is another example of this instance to get soft tissue slack, comparable somewhat to the hallux valgus operation, which might be considered as being another indication for accepting loss of length. This is particularly of value in elbow procedures in which considerable fibrosis is frequently present about the joint severely disorganized by trauma, sepsis or both.

A fourth length-sacrificing procedure, a distinctive overlap, not yet published but recommended in a paper read before the American Orthopedic Association at their 1947 meeting, was devised for inveterate deformities of the forearm, particularly nonunion or malunion of both bones. It is an operation of last resort designed for those unfortunate persons who have had much unsuccessful surgical treatment but who are willing to go through one more operation if given sufficient encouragement. We all agree that bone grafting for nonunion of fractures of both bones of the forearm is a major procedure and one is happy to be able to offer a simpler surer operation to a long-suffering patient.

This same overlap procedure is valuable in the severe bowing deformities associated with bone softening conditions such as rickets, fragilitas ossium, osteogenesis imperfecta and fibrous displasia, particularly if bilateral. When the correction seems to be indicated at the ends of the long bones, a telescope technic is valuable, which is, in my experience, most useful in deformities in the upper part of the femur.

In major defects of one of the bones of the forearm either from neoplasms, sepsis or trauma, it is frequently more desirable to shorten the other bone than to employ the infinitely more time-consuming process of massive bone grafting associated not infrequently with pedicle grafting to fill in soft tissue defects, as in a gun shot wound of the forearm.

The 1½ to 2 inches (3.8 to 5 cm.) shortening of the extremity as a whole is of more moment to the tailor than to the patient, as the discrepancy in length of the upper extremity is not as serious as in the lower and is not conspicuous to the casual observer. The muscles have been proved to accommodate themselves to the shortening in the upper as well as in the lower extremity.

In acute trauma, particularly extreme compound comminuted fractures in which immobilization is all important, the avoidance of the use of traction and the acceptance of some shortening is felt justified for the sake of discouraging the development of sepsis in a contaminated wound.

SUMMARY

I have attempted in this paper to call attention to a definite surgical procedure which I feel is too infrequently considered as a definite therapeutic entity in solving major surgical problems. I urge the consideration of the sacrifice of length for safer, surer and speedier results in appropriate cases, bearing in mind the inherent ability to compensate possessed by the human frame.

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[3] White, J. W.: Operative Technic for Correction of Hallux Valgus, U. S. Nav. M. Bull. **17**: 802 (Nov.) 1922.

[4] Mumford, E. B.: New Operation for Acromioclavicular Dislocation: New Operative Treatment, J. Bone & Joint Surg. **23**: 799 (Oct.) 1941.

[5] Smith-Petersen, M. N.; Aufranc, O. E., and Larson, C. B.: Useful Surgical Procedures for Rheumatic Arthritis Involving Joints of the Upper Extremity, Arch. Surg. **46**: 764 (May) 1943.

The Surgeon's Responsibility.—The guiding circumstance of a surgeon's life is personal responsibility. He is in charge, he must make decisions and initiate or carry out the line of action those decisions imply, and on the correctness of his decisions and the skill and determination with which the action is carried out depends the welfare and possibly the life of his patient. All the material for a correct diagnosis may not be available, at any rate at a particular time, but there must always be a decision; even though it may not be the right one it is the best that can be made at the time and the one on which action must be based if action is needed.—Ogilvie, Heneage, M.D., A Surgeon's Life, *The Lancet*, July 3, 1948.

NERVOUS FACTORS IN GENERAL PRACTICE

FRANK N. ALLAN, M.D.
and
MANUEL KAUFMAN, M.D.
Boston

Consciously or unconsciously every physician, surgeon or specialist must give attention to the influence of mental, nervous and emotional factors in health, illness and convalescence. More than any other, the general practitioner has always been noted for the consideration given to the feelings and personality of the sick. That his efforts in this field have met with a large measure of success is demonstrated by the loyalty of his patients.

There has been evidence of an increasing desire to learn more about psychiatry and its contribution to medical practice, but when a general practitioner or internist turns to any of the older textbooks written by a psychiatrist, he may fail to secure the help he needs. He will find a lengthy discussion of major mental disorders and relatively little attention given to minor mental and emotional factors. For the average practitioner a psychosis occurs only in an exceptional case. He is likely to see a good many patients with a condition meeting the description of psychoneurosis, but the majority of the mental and nervous disorders he encounters cannot be precisely included in either of these categories.

In confirmation of the common experience of the general practitioner, the inadequacy of traditional neuropsychiatric classifications was emphasized in military practice (Thomas,[1] Strecker[2]). The need for a realistic and practical classification as the foundation for more satisfactory management of a large group of cases has become urgent. It is not just a matter of finding an appropriate diagnostic label, although even this is important. To call every patient with a nervous problem, psychopathic or psychoneurotic is an injustice. In the public mind these terms carry a stigma. The real requirement is to arrive at a diagnosis which can serve as a guide to effective therapy and accurate prognosis.

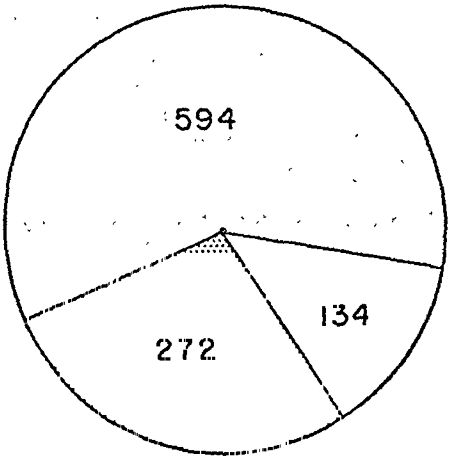

Fig. 1.—Survey of 1,000 general medical cases: 594 of physical disorders only, 272 of nervous and 134 of both physical and mental disorders.

SURVEY OF ONE THOUSAND GENERAL MEDICAL CASES

An analysis was made of the mental, nervous and emotional factors in 1,000 unselected ambulatory cases in which the patients had come to the Lahey Clinic for a general medical examination. The evaluation was made by us at the time of the investigation of each case, and an effort was made to follow a uniform policy of classification. Medical problems of all sorts with complaints relating to every system were included in the group; most of them were chronic. It cannot be claimed that this group is typical of patients seen in general practice or even in clinic practice, but, if not quantitatively comparable to other situations, this survey can at least give a perspective of neuropsychiatric problems in proportional relationship. It must be admitted, too, that the evaluation of neuropsychiatric factors by the physicians responsible for the study would not be confirmed in all respects by others; the nature of neuropsychiatry leads to differences in interpretation. With these allowances the study may serve to illustrate the neuropsychiatric problems of general medical practice, particularly in relation to chronic ill health.

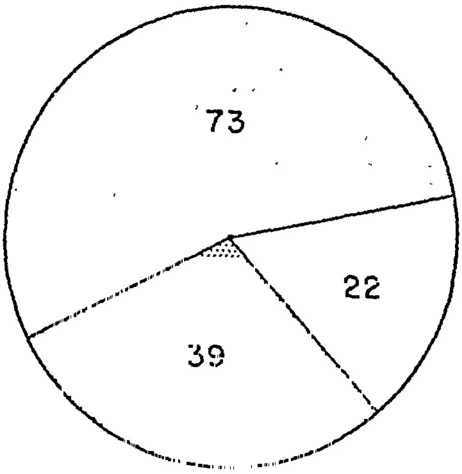

Fig. 2.—Associated physical and psychiatric conditions in 134 cases: 39 independent, 73 with physical disorder affected by nervous state and 22 with nervous state secondary to physical disorder.

INCIDENCE OF NEUROPSYCHIATRIC PROBLEMS

In 594 of the 1,000 cases the complaints were explained entirely by physical disorders (fig. 1). There was no nervous problem of clinical importance. In 272 cases the complaints were purely neuropsychiatric; in 134 a combination of physical disorders and significant neuropsychiatric disorders was encountered. In 39 cases of this last group (fig. 2), independent and unrelated physical and nervous problems coexisted (for example, renal calculus and neurasthenia); in 73 the physical disorder (for example, bronchial asthma) was aggravated or provoked by a primary nervous state, and in 22 the nervous state was considered to be secondary to the physical disorder (for example, an anxiety state in a patient having mitral stenosis).

Even though it may appear to be restricted to a physical disorder, any illness might be considered to have a mental component. The degree of mental and nervous reaction will depend on several factors, including the seriousness of the illness, the degree of suffering,

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From the Department of Internal Medicine, the Lahey Clinic.

Read before the Section on General Practice at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

[1] Thomas, J. M.: The Use of the Term "Psychoneurosis," New England J. Med. **232**: 121-124 (Feb. 1) 1945.

[2] Strecker, E. A.; Ebaugh, F. G., and Ewalt, J. R.: Practical Clinical Psychiatry, ed. 6, Philadelphia, The Blakiston Company, 1947.

uncertainty regarding the outcome, interference with work and other plans, financial loss and perhaps most of all the personality of the patient. In the majority of patients as we see them, the nervous reaction does not become a medical problem. In nearly 60 per cent of this group of 1,000 patients, there was no noteworthy nervous condition requiring special treatment. It might be said that nothing was needed from this standpoint beyond expression of the art of medicine as employed by every medical practitioner.

CLASSIFICATION

Further analysis (fig. 3) showed that of the 406 neuropsychiatric cases there were 3 cases of psychosis and 7 borderline cases, including 5 cases of mental depression. In 75 cases the diagnosis of psychoneurosis was made. There remained 321 cases in which the diagnosis neither of psychosis nor of psychoneurosis appeared justified. The characteristics of this group will be discussed later.

DIAGNOSIS OF NERVOUS CONDITIONS

The diagnosis of nervous conditions[3] should not depend merely on exclusion of organic disease; in fact, 1 in 7 of our patients had both physical and nervous disorders of importance. Recognition must depend on observation of the characteristic manifestations of the nervous disorder itself. Some of the somatic complaints are pathognomonic; among these are globus hystericus and sighing respiration with difficulty in getting a satisfying breath. Signs of nervous tension which can be noted on examination include bitten finger nails, flushing of the face and variable tachycardia. The fatigue resulting from nervous tension has special characteristics, described elsewhere. These include variability unrelated to physical activity; it is usually worse in the morning, decreasing after activity. One can learn, sometimes with ease and sometimes with difficulty, of worries, low spirits, inability to enjoy work and social relationships, difficulty in making decisions and disturbing mental conflicts.

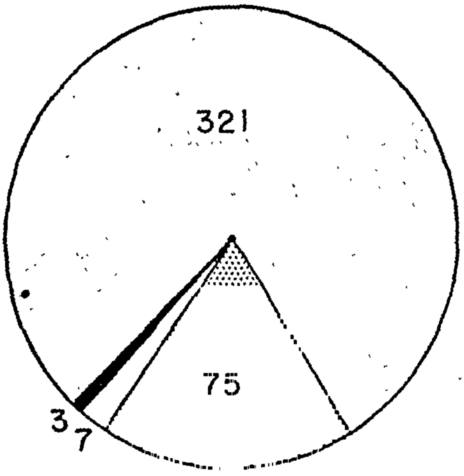

Fig. 3.—Classification of neuropsychiatric cases: 3 cases of psychosis, 7 borderline cases, 75 cases of psychoneurosis and 321 others.

The next step is to distinguish from the neuroses the larger group already mentioned. For these cases of "benign nervousness" there is no diagnostic term which has been generally accepted, but they must be distinguished from the other groups in the consideration of diagnosis, treatment and prognosis. Although there is no clearcut line of differentiation, there is just as much difference from the practical standpoint between the benign nervous conditions and the neuroses as between the neuroses and the psychoses.

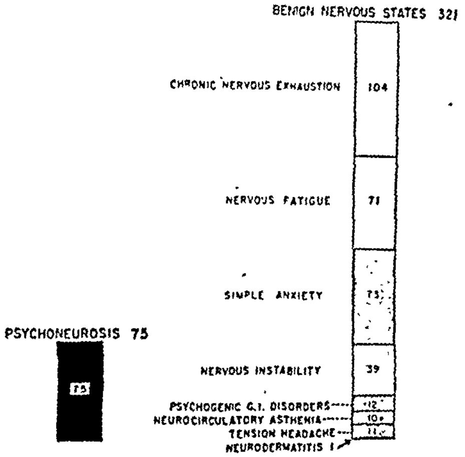

Fig. 4.—Clinical types of nervous disorders.

Several points of difference have been outlined elsewhere. A neurosis is largely dependent on *an intrinsic defect in the personality* of the person[4] and is usually considered to be an expression of subconscious emotional conflicts. There may be a background of constitutional inadequacy. In the family history "nervous breakdown" is of common incidence. Multiple complaints are usual. The history is changeable. The onset of complaints is vague—they frequently date back to childhood. Benign nervousness, on the other hand, is largely the result of *external factors.* The patient is of average constitution. He is more likely to have a single complaint. He gives a consistent history. He can date the onset of his symptoms, and he gives a previous history of average health.

The reaction to reassurance in these two types of cases is decidedly different. The neurotic patient is disappointed when the physician tells him that the physical examination gave negative results. He needs psychotherapy planned to suit his individual circumstances. The patient with benign nervousness expresses satisfaction if informed that there is nothing physically wrong. He can recover without any special psychotherapy other than sufficient time with the physician to ventilate his problems.

NOMENCLATURE

The Committee on Statistics of the American Psychiatric Association classified the psychoneuroses into six separate types—hysteria, psychasthenia, hypochondriasis, anxiety state, neurasthenia, reactive depression (simple situational reaction) and a mixed group. Anxiety state and simple situational reaction would be the appropriate terms in many of the cases in which we have considered the conditions to be benign nervous states, but for the group as a whole it seems to us more important to distinguish a separate clinical problem and not a type or types of psychoneurosis. The distinction is not merely a matter of degree; it concerns the difference in the personalities of those concerned. The management of a case must be planned accordingly and the prognosis modified.

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[3] Allan, F. N.: The Differential Diagnosis of Weakness and Fatigue, New England J. Med. **231**: 414-418 (Sept. 21) 1944; The Clinical Management of Weakness and Fatigue, J. A. M. A. **127**: 957-960 (April 14) 1945.

[4] Dynes, J. B.: Mental Breaking Points, New Eng. J. M. **234**:42-45 (Jan. 10) 1946.

The unsatisfactory situation in regard to classification led to formulation of separate nomenclature lists for the Army, the Navy, the Public Health Service and the Veterans Administration. As Thomas[1] pointed out, the introduction of a new term for the benign nervous conditions would be undesirable at this time, but if the physician has his attention directed toward therapy and prognosis on a sound basis, the ordinary descriptive terms of clinical types will suffice.

CLINICAL TYPES OF NERVOUS AND EMOTIONAL DISORDERS

Separation of the two main groups of cases into clinical types is often difficult because they tend to overlap, but the effort to subdivide them on a descriptive basis according to predominant characteristics resulted in data of some interest (fig. 4).

Among the cases in which there were nervous and emotional disorders, the diagnosis of psychoneurosis was made in 75 (neurasthenia 60, anxiety neurosis 10, hysteria 5). The diagnosis of a benign nervous state was made in 321 cases. In 104 of these the term applied was chronic nervous exhaustion. The term nervous fatigue was used to describe the same condition when shorter in duration and less severe in degree. This diagnosis was made in 71, making a total of 175 cases of nervous exhaustion or fatigue. The diagnosis was simple anxiety in 73, nervous instability in 39, psychogenic gastrointestinal disorders, including irritable colon and nervous indigestion in 12, neurocirculatory asthenia in 10, tension headache in 11 and neurodermatitis in 1.

The identity of these types was not as clearcut as these figures seem to indicate. There was much overlapping, but in the interest of simplicity each case was classified in one or other of the types according to the predominant characteristic. Actually, tension headaches and functional gastrointestinal disorders occurred also in many of the cases listed under the heading of chronic nervous exhaustion and simple anxiety. When a patient with neurocirculatory asthenia was also neurotic his condition was classified as anxiety neurosis.

TREATMENT

The physician who can readily secure the help of a psychiatrist for his patients is fortunate. The advantages of special training and experience in psychotherapy are unquestioned, although patients often resent the recommendation of a psychiatric consultation and physicians are sometimes reluctant to advise it. The idea that only the person with a major mental disorder is a proper patient to refer to the psychiatrist is still prevalent. There is misunderstanding of the possibilities of psychotherapy, too.

As explained by Appel,[5]

> Psychotherapy is not just talking to patients; it is not just humoring them, neither is it the giving of platitudinous suggestions, nor is it merely the prescription of sedatives and placebos. It is more than removing an irritated, stubborn, temperamental person from the home to give the family relief. Psychotherapy has well defined goals; it has well defined rules and methods (proven for the most part) of reaching these goals. New ideas, attitudes, correlations and perspectives must be woven in the web of the patient's life according to the laws of emotional health.

The patient with a benign nervous condition can usually be treated satisfactorily by any physician who shows interest, tact and patience. Often such a person will get along best with the family doctor, in whom he has confidence. This physician may exert a stronger influence over a longer period of time. Nevertheless, all of us engaged in the practice of medicine can profit by learning new technics in psychotherapy. We must avoid falling into ruts, applying the same technic in every case. We cannot successfully use simple reassurance in all cases. In particular, we must recognize the fact that we cannot expect to help the patients with true psychoneuroses by means of so-called "common sense." It is in these cases that the skill and experience of the specialist are most urgently needed. These are the cases which should be particularly selected for psychiatric consultation and treatment. The psychiatrist should be called on when there is continuing disability. His help is welcomed in these most serious cases. He can also provide leadership in developing and teaching technics for the internist and general practitioner to use in the simpler cases.

MAJOR MENTAL DISORDERS

Only 10 patients with serious psychopathic conditions appeared in the 1,000 cases, and in only 3 of these was there an actual psychosis. Although he may not see patients with psychosis often, the physician must recall in each instance the various physical disorders which might be responsible before he shifts his responsibility to the psychiatrist or institution for mental diseases. When the patient has an acute psychosis, the physician must consider among other conditions drug intoxication, alcoholism, hypoglycemia (spontaneous or induced by insulin) and an epileptic equivalent. When the symptoms are chronic he must consider syphilis, brain tumor, pellagra and also the effects of drugs, especially bromide and digitalis.

The special treatment of the psychoses should be left to the specialist, but it may be pointed out that the prospects of successful therapy have been increased in recent years, in particular by insulin and electric shock and also by frontal lobotomy.

The patient with the so-called psychopathic personality does not show the loss of sense of reality and the abnormal thoughts and behavior of the psychotic patient, but he displays nonconformity with the usual social standards, maladjustments, which lead to difficulties in school and work and in the home, and repetition of harmful behavior in spite of realization of the consequences. There are cases in which the term psychopathic personality seems inappropriate and extreme. In these, the less offensive term, eccentric personality, can be used. Each of these terms was used once in the 1,000 cases.

The psychopathic personality in itself is not often a medical problem, but people with such personality, as well as patients with actual psychosis, come to doctors because of the ordinary ailments. The physician must take the peculiarities of the person into account in dealing with his complaints. One thing that must be recognized clearly is the futility of attempting to change the psychopathic personality by reasoning or by scolding. Recognition of this fact will enable the physician to save his own time and prevent disappointment on the part of all concerned.

MENTAL DEPRESSION

Simple mental depression is a more common problem; it was observed in 5 cases in this series. The common manifestations are low spirits, weeping, self reproach, feelings of guilt, slowing of action, inability to make decisions and sometimes morbid ideas regarding disease and abnormal function. People who have been energetic, buoyant in spirit and successful in their activities show this change in personality, sometimes initiated by grief or disappointment or for no apparent reason.

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[5] Appel, K. E.: Psychiatric Therapy, in, Personality, and the Behavior Disorders, Edited by J. McV. Hunt, New York, Ronald Press, 1944, vol. 1, p. 1137.

In the milder cases there may be some benefit from reassurance; in the more severe cases, particularly those in which there has been no apparent precipitating factor, efforts at reassurance never help much. In some women at the menopause there may be benefit from estrogenic therapy. Claims have been made for success in treating older men with androgens, but the results are more often disappointing. "Benzedrine" (amphetamine) and desoxyephedrine help in some of the milder cases. In severe cases, electric shock therapy has been promising.

In general, the effectiveness of psychotherapy is limited in dealing with these depressed patients. Reasoning is futile. The physician can be spared wasted efforts and disappointments by recognition of the nature of the type of disorder. There is reason to hope for spontaneous remission of the cycle of despair, but the risk of suicide must be kept in mind. Hints regarding suicide must not be disregarded; institutional care, or at least psychiatric aid, should be secured if possible.

SUMMARY

To evaluate the importance of nervous and mental factors in relation to ill health, a survey was made of 1,000 cases in which a general medical examination was made at the Lahey Clinic. In 60 per cent the complaints were explained entirely by physical disorders; there was no nervous problem of clinical importance. The complaints were purely nervous and mental in 27 per cent. A combination of physical disorders and significant neuropsychiatric disorders required attention in 13 per cent.

Among the 406 neuropsychiatric cases, in only 3 was there a psychosis, in 7 borderline psychotic problems, including 5 cases of mental depression. In 75 cases the diagnosis of psychoneurosis was made. There remained 321 cases in which the diagnosis neither of psychosis nor of psychoneurosis appeared justified. This large group of patients presenting benign nervous and emotional disturbances should be distinguished, to ensure them proper attention from the medical, psychiatric and social point of view. They can usually be managed by any physician, requiring only thoroughness in examination, an understanding attitude, tact and patience. The patients with the more serious, deep-seated nervous disorders deserve the special management of the psychiatrist.

ABSTRACT OF DISCUSSION

Dr. John B. Dynes, Boston: I believe that the figures presented in this paper have particular significance in regard to the relation of psychiatry and general practice. Of 406 patients who had some kind of nervous or mental disorder there were 321 who could not be classified under any definite psychiatric label. Psychiatrists see a relatively small proportion of all the patients with nervous disorders. They draw their conclusions largely from cases which represent a selected group. Sometimes these conclusions do not agree with conclusions which would be reached by general practitioners who see a representative cross section of all types of medical problems and who see a relatively small proportion of patients with serious nervous and mental disorders. In the Section on Internal Medicine, Dr. Henry Thomas, who spoke on "What is Psychotherapy," stressed an important point, namely that the physician who first sees the patient is in a good position to alter that person's attitude for good or ill. You are all familiar with the fact that some patients have been permanently influenced by medical advice in early life. For example, a person given a false diagnosis of heart disease may become a permanent neurocirculatory invalid. The physician is also in a position to exert an unusually potent weapon for good. You are all familiar with the potency of suggestion in dealing with certain persons The general practitioner has great influence in psychotherapy. The mere statement from the physician that the patient has "no nervous or mental disorder" and "no disease" can often quiet the patient's fears. Irregular practitioners (faith healers, chiropractors and so forth) are anxious to take over patients who are given insufficient attention by general practitioners and specialists merely because the trouble is primarily nervous, cases in which the general practitioner can furnish so much more help with his greater knowledge and interest in all the problems of the patient. A psychotherapist is born and not made. Although a natural aptitude is important, another important factor in the handling of patients with nervous disorders is that one must take enough time to find out what ails the patient. Time is costly, but it pays rewards, not so much from the monetary standpoint but from that of helping persons who are disturbed and distressed.

Dr. Frank N. Allan, Boston: Medical education has been inadequate in respect to the attention given the nervous factors in medical practice. Better teaching in psychiatry is needed, but general practitioners should also make their contribution to the education of medical students and interns in the diagnosis and management of the common nervous problems.

CARCINOMA OF THE CERVIX (STAGE I) TREATED INTRACAVITARILY WITH RADIUM ALONE

Five, Ten and Fifteen Year Results; Recurrences After More Than Five Years

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Experience has shown that the rate of cures following radiotherapy of carcinoma of the cervix, stage I, has not risen above 75 per cent despite technical improvements. Co-workers have tried to find the reason for this, with special reference to the action of locally applied radium.

Our study includes the histories of 105 patients with carcinoma of the cervix, stage I, histologically verified in each case, treated from 1929 to 1941 with radium alone at the Curie Foundation.

In fact, during that period the equipment of our departments was insufficient, so that we were not able routinely to combine, as we usually do now, external radiation with intracavitary curietherapy in each case. As a result, out of 228 patients (stage I) only 123 received intracavitary radiotherapy with external irradiation. One hundred and five received only local treatment with radium.

CLINICAL ASPECTS OF THE LESIONS

In the 105 patients observed, the tumors seemed, at the clinical examination, entirely limited to the cervix. They were more or less bulky exophytic growths or endocervical ulcerations with partial destruction around the external ostium. In 5 cases the condition developed in a remaining cervical stump.

These were not necessarily the best cases. Only 5 patients had early lesions; 10 were obese; 14 were 70 to 80 years old; 14 were in bad general condition;

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3 had previously received roentgen therapy for uterine fibroids; 2 patients refused external irradiation, and 55 could not be treated by external irradiation because of the shortage of apparatus. In addition, the treatment in 2 patients, who subsequently died, was interrupted because of septic complications.

TECHNIC OF TREATMENT

The usual technics of the Curie Foundation with some minor technical modifications have been utilized.

Endouterine application is made with a sound of gum lined with a thin aluminum leaf. The external diameter is 6 mm. Depending on the case, two, three, four and occasionally five tubes of radium element filtered with 1 mm. of platinum are placed in the sound. The length of the apparatus is adjusted to the depth of the uterocervical canal which requires radiation. The usual length of the sound is 8 cm., containing two tubes of 13.33 mg. of radium element and one tube of 6.66 mg. of radium element. The 6.66 mg. tube is placed in the distal portion of the sound. We think that it is most important to radiate the uterine canal beyond the isthmus; however, it is not necessary to go too far when the uterine cavity is enlarged to 12 or 14 cm., which is usually the case when fibroids are associated with carcinoma of the cervix. We have occasionally used sounds of 12 to 14 cm. containing four to six tubes. The sound, because of the lining of aluminum, is sufficiently rigid, but is flexible enough to allow articulation between the tubes, and therefore it easily accommodates itself to the direction of the canal.

Intravaginal irradiation is accomplished with the colpostat, in which the spring between the corks is more supple than usual. It is then easy to place the corks containing tubes of 13.33 mg. of radium element in the lateral fornices without undue distention of the vaginal vault. This also facilitates the placement of one or two independent corks containing 6.66 mg. of radium element in front of the cervix. Loose packing with small gauze strips carefully placed assures fixation of the colpostat in the proper position during the time of irradiation and also affords protection to the surrounding structures anteriorly and posteriorly. The suppleness of the spring is advantageous in reducing the trauma to the mucosa in contact with the cork.

In 95 per cent of the cases treatment is begun with placement of the uterine sound immediately after dilation of the uterus. This is done under strict aseptic precautions and with minimal trauma, in order to avoid the complications of infection. Very little dilatation is required, because the external diameter of the sound measures only 6 mm. The sound is left in place for five or six days, and on the second or third day after the beginning of uterine irradiation the colpostat with the medial cork is placed and left for five or six days. It is planned to administer the total dose in seven to ten days.

In 5 per cent of the cases, the cervical ostium is not visible because of a bulky friable lesion. Under those conditions it is more prudent, in order to avoid any unnecessary trauma and the potential complications of infection, to place the colpostat first. Rapid regression of the bulky tumor occurs, and it is usually possible to place the uterine sound after five or six days. The dose delivered varies from 24 to 36 and in exception cases 40 millicuries destroyed (3,200 to 4,700 and 5,230 milligram hours) in the uterine cavity and 24 to 36 millicuries destroyed (3,200 to 4,700 milligram hours) in the vagina.

In the 5 cases of carcinoma of the cervical stump the vaginal dosage was the same as in the other cases; however, the intracervical dose never exceeded 12 millicuries destroyed (1,600 milligram hours).

In general, the dose administered has been smaller for the aged or those patients in poor condition and larger for the young and healthy patients.

POST-TREATMENT REACTIONS

Frequently during the intracavitary application of radium there is a slight rise in temperature. There are no abdominal signs present. The 2 patients who died of septic complications were treated in 1931 and 1933. Since 1936, chiefly because the conditions of hospitalization have improved, we have not seen in patients with the epithelioma of the cervix (stage I) any septic complications serious enough to require interruption of treatment or to endanger the life of the patient. In most of the stage I cases the treatment proceeds without incidence, and frequently the general health of the patient is improved during treatment because the melting away of the tumor causes less bleeding and the superficial infection clears.

There were few rectal reactions. These were chiefly benign. Of the 105 patients treated, 71 had no intestinal complaints, either early or late; 15 manifested rectal symptoms approximately eight to fifteen days after treatment. These symptoms were chiefly diarrhea and occasionally blood-streaked mucous stools. Eight patients had isolated symptoms (short periods of diarrhea, constipation and tenesmus), which appeared during the first year after the treatment. Late symptoms appeared one year or more after the treatment in 10 patients. There were 5 patients with moderate but persistent constipation. Five others had various other benign complications, consisting of alternating diarrhea and constipation, tenesmus and hemorrhoids. In most of these cases intestinal complaints had existed before the beginning of treatment.

Only 1 patient had a serious complication, which was an histologically proved necrotic ulcer on the anterior wall of the rectum, 5 cm. from the anus. The lesion appeared eight months after treatment. Some months later this lesion healed, leaving only a fibrous scar in its place. This complication was explained on the basis of a technical error which could have been avoided. The patient died six years later of local and pelvic recurrence.

RESULTS OF TREATMENT

Of the 105 patients treated, 74, or 70.4 per cent, were alive without evidence of disease after an observation period of five years. Two died of complications of the treatment. Eleven died from intercurrent diseases after a period of observation from six months to four years (1 after six months of pulmonary tuberculosis, 2 after four and 5 months of psychosis which had existed prior to the treatment, 5 after three or four years of cardiac disease and 3 after one to two years of pulmonary disease). Eighteen patients had recurrences from eleven months to four years after the treatment (3, local recurrences; 2, recurrences in the corpus and parametrium; 5, local and pelvic recurrence; 6, recurrences in the pelvis alone, and 2, distant metastases). The earlier recurrences appeared in the parametrium after eight months in a case of carcinoma of the cervical stump, and in another case of exophytic tumor of the cervix a recurrence developed in situ. There were 15 cases of recurrence after two to three years. The latest recurrence occurred locally after four years and nine months in a case of endocervical carcinoma. The recurrence was sudden and the evolution rapid in 17 cases. We had only 1 case in which the condition progressed slowly after recurrence.

Three Local Recurrences.—There was local recurrence in 3 cases: in 1 after eight months, in 1 after eleven months and in 1 after four years and nine months. The dosage delivered in these cases were 30 plus 30 millicuries destroyed (4,000 plus 4,000 milligram hours), 28 plus 33.6 millicuries destroyed (3,700 plus 4,400 milligram hours) and 34.8 plus 34.8 millicuries destroyed, (4,600 plus 4,600 milligram hours).

TABLE 1.—*Epithelioma of Cervix Uteri Treated Locally with Radium Alone—1929 to 1941*

Year	Number of Patients Treated	Number of Patients Alive and Cured After 5 Years	Fate of the Patients Cured After 5 Years: Alive and Cured in 1948	Patients Dead of Intercurrent Disease	Lost Sight of	Local Recurrence Cured by Surgery	Recurrence in Uterus and Surrounding Tissues	Local and Pelvic Recurrences	Pelvic Recurrence Alone
1929	9	6	4	2	..	..	..	..	..
1930	11	9	5	4	..	..	..	..	..
1931	9	6	4	1	..	..	..	1	..
1932	14	11	9	1	..	..	1	..	..
1933	14	12	8	1	1	1	1	..	..
1934	19	13	11	1	..	..	..	1	..
1935	8	2	2	..	..	..	..	..	..
1936	7	4	3	1	..	..	..	..	..
1937	5	4	3	1	..	..	..	..	..
1938	4	3	2	..	..	..	..	..	1
1939	3	3	3	..	..	..	..	..	..
1940	1	0	0	..	..	..	..	..	..
1941	1	1	1	..	..	..	..	..	..
Total	105	74	55	12	1	1	2	2	1

TABLE 2.—*Epithelioma of Cervix Uteri (Stage I) Treated Intracavitarily with Radium Alone from 1929 to 1941; Results After Five Years*

Year	Number of Patients Treated	Number of Patients Cured After 5 Years	Dead of Intercurrent Disease Before 5 Years	Dead of Complications of the Treatment	Recurrence Clinically Local	Local and Pelvic Recurrence	Pelvic Recurrence Alone	Recurrence in Uterus and Surrounding Tissues	Metastasis
1929	9	6	2	..	..	..	1	..	..
1930	11	9	..	..	..	..	1	1	..
1931	9	6	..	1	..	..	..	1	1
1932	14	11	1	..	1	..	..	..	1
1933	14	12	..	1	1	..	..	..	..
1934	19	13	1	..	1	1	3	..	..
1935	8	2	4	..	..	2	..	..	..
1936	7	4	1	..	..	2	..	..	..
1937	5	4	..	..	..	..	1	..	..
1938	4	3	1	..	..	..	..	..	..
1939	3	3	..	..	..	..	..	..	..
1940	1	0	1	..	..	..	..	..	..
1941	1	1	..	..	..	..	..	..	..
Total	105	74	11	2	3	5	6	2	2

The first patient, a very obese person, received a second intravaginal application of 28 millicuries destroyed (3,700 milligram hours). Radionecrosis occurred, but in spite of that the disease progressed rapidly and the patient died fifteen months later. The second patient, in whom the recurrence was apparently limited to the cervix, had a radical Wertheim operation performed. At operation, the right side of the pelvis was observed to be involved with neoplasm. Examination of the operative specimen disclosed that the recurrence in the uterus had developed chiefly at the level of the isthmus in a heavily radiated area. A postoperative vesicovaginal fistula occurred, and the patient died of disease six months later.

In the third case, there was recurrence about four years and nine months after treatment. Because of the large dose used in the first treatment, no further local therapy was given. External teleradium therapy was utilized. The cervix healed; however, the patient died of abdominal metastases after six years.

Two Recurrences in the Body of the Uterus and the Parametrium.—There were 2 cases with recurrences in the body of the uterus and the parametrium, which appeared suddenly after one and three years, respectively.

The first patient had a carcinoma of the endocervix and received a dose of 28.2 plus 32.4 millicuries destroyed (3,750 plus 4,300 milligram hours). Several weeks before the recurrence the patient had a cerebral hemorrhage with deterioration of her general condition; therefore it was not possible to give her any further treatment, and she died sixteen months later. The second patient, aged 71, was treated with a low dosage, 21.4 plus 28.4 millicuries destroyed (2,850 plus 3,700 milligram hours). There was a recurrence three and a half years later. The evolution of the process was rapid, and the patient died four months later.

Five Local and Pelvic Recurrences.—There were 5 cases of local and pelvic recurrence, in 3 of these patients after fifteen to twenty months. These were cases of endocervical carcinoma. The doses used were 36 plus 30 millicuries destroyed (4,700 plus 4,000 milligram hours) and 30 plus 33.6 millicuries destroyed (4,000 plus 4,400 milligram hours). The progression of the disease was rapid, and the patients died two and two and a half years after the beginning of treatment. The fourth recurrence was in a case of adenocarcinoma of the cervical stump, in spite of a rather significant dose, since it has been possible to give, by means of an intracervical applicator, 15.6 millicuries destroyed in addition to the vaginal dose of 26.4 millicuries destroyed (2,140 plus 3,500 milligram hours).

The fifth patient had a late recurrence, the lesion having been treated with an unsatisfactory technic. There was recurrence after four years, and death followed two years later.

Six Pelvic Recurrences.—There were 6 cases of pelvic recurrence, with early recurrence after eight months in a case of exophytic carcinoma of the remaining cervix (12 plus 36 millicuries destroyed) and after one year in the case of a bulky cervical tumor (30 plus 30 millicuries destroyed).

There were recurrences after two, three and four years in 4 other patients: 2 with endocervical carcinoma and 2 with exophytic tumor. Progression of the disease was rapid, and death occurred four to five months after the recurrence. It was possible, with roentgen treatments, to slow the progression of the disease in the case of the cervical stump carcinoma; however, the patient subsequently succumbed to the disease.

Two Distant Metastases.—Metastases to the liver and generalized metastases occurred after one year in a case of a highly undifferentiated carcinoma in a very obese patient. Metastasis to the vertebral column occurred after four years in a patient treated for endocervical carcinoma.

FATE OF CURED PATIENTS AFTER FIVE YEARS

Of the 74 patients in good condition five years after treatment, 55 were alive and well at the time of writing: 4 for eighteen years, 5 for seventeen years, 4 for sixteen years, 9 for fifteen years, 8 for fourteen years, 11 for thirteen years, 2 for twelve years, 3 for eleven years, 3 for ten years, 2 for nine years, 3 for eight years and 1 for seven years.

Twelve died of intercurrent disease from six to fifteen years after the treatment. Nine of them were over 70 years old: 1 patient was 70 years old; 1 was 73; 2 were 77; 2 were 78; 1 was 79; 1 was 82, and 1 was 89. They died of cardiac disease and acute pulmonary congestion. Three others died younger, at ages 65, 59 and 63 years, respectively, of uremia, pulmonary disease and other indeterminate cause. One patient was untraced after six to seven years. There were 6 cases of recurrence after six, seven, eight and eleven years.

Local Recurrences.—There was 1 case of local recurrence after six years, which was a small endocervical lesion. The dosage had been 33.6 plus 27.6 millicuries destroyed (4,400 plus 3,670 milligram hours). A Wertheim operation was performed in another country in 1940. The patient was alive and well at the time of writing. Unfortunately, we have no description of the operative observations.

Two Abdominal Recurrences Involving the Intestine.—In 2 patients abdominal recurrences involving the intestine were seen after six and seven years. The patients had bulky exophytic tumor of the cervix. The dosage was 30 plus 25.2 millicuries destroyed (4,000 plus 3,350 mililgram hours) for the first patient, age 70, and 33.6 plus 30 millicuries destroyed (4,400 plus 4,000 milligram hours) for the second patient. The progression of the disease was rapid.

Two Local and Pelvic Recurrences.—Two patients died after eight and a half years and eleven years. This occurred during the German occupation, and it was necessary for us to receive information indirectly about these patients; however, from the data received, it was assumed that local and pelvic recurrences had developed.

One Pelvic Recurrence After Six Years.—An obese patient was treated for an endocervical carcinoma with a dosage of 36 plus 34.2 millicuries destroyed (4,788 plus 4,500 milligram hours). Six years after treatment she presented a slowly progressive pelvic recurrence. This grew to involve the whole pelvis, and the patient died one year and ten months after the appearance of the recurrence.

GENERAL REVIEW OF THE RECURRENCES

The beginning of recurrences before or after the fifth year was sudden in 20 cases, less sudden in 2 cases and undetermined in 2 cases.

Progression was rapid in the nontreated patients, and the survival was six to ten months for 15 patients and fifteen to twenty-six months for 5 other patients.

Of the 4 patients treated a second time, 1 patient died four months after the operation, and 2 patients who received roentgentherapy and telecurietherapy, respectively, died fifteen and twenty-seven months after the onset of the recurrence. The last patient was actually cured by a Wertheim operation performed for a local recurrence six years after intracavitary curietherapy.

It is difficult to explain the recurrences on the basis of the dosage delivered; in fact, there were local recurrences in 4 patients who received large doses: 33.3 plus 24 millicuries destroyed, 30 plus 30 millicuries destroyed, 34.8 plus 34.8 millicuries destroyed and 33.6 plus 27 millicuries destroyed, respectively, in a place where the tissue dose was high. In addition, 2 cases of recurrence in the body and surrounding tissues began in the uterine canal alongside the uterine sound.

There was pelvic recurrence in an obese patient who had received 36 plus 34 millicuries destroyed (4,788 plus 4,400 milligram hours).

Other patients have been cured with smaller doses. Actually, 1 patient who has been living and well for seventeen years received only 24 plus 30 millicuries destroyed. Two other patients, living and well after sixteen years, received, respectively, 24 plus 31.2 millicuries destroyed and 21.6 plus 32.4 millicuries destroyed.

The failures observed in this series of 105 cases cannot be attributed to any special anatomic clinical type of lesion. They have essentially the same frequency in the endocervical carcinoma and in the exophytic tumors. The histologic examination of the specimens disclosed the same varieties in the cured and noncured patients. In only 1 case, that of a wholly undifferentiated carcinoma, did the histologic aspect of the primary lesion give a foreboding of the development of early metastasis. The origin of these tumors is perhaps in isolated cancerous cells not destroyed by radiation, which remain quiet for a variable length of time and suddenly become active in situ or give birth to more or less remote new foci. One may postulate that isolated cancerous cells already scattered through the parametrium or pelvic glands suddenly become active after a latent period.

We feel that cure of epithelioma of the cervix uteri, stage I, can be obtained by treatment with radium alone, as well as with radium plus roentgen rays, and that perhaps the roentgen rays are not necessary. However, rather than undertake such a program too soon, we have started to treat a series of patients by performing a Wertheim operation six weeks after the intercavitary therapy. In removing the uterus, the dangers of local recurrence are taken away. In addition, this permits us to study the effects of radium therapy and to verify the condition of the pelvic glands.

ABSTRACT OF DISCUSSION

Dr. Harry H. Bowing, Rochester, Minn.: The officers of the Section on Radiology of the American Medical Association have extended to me the privilege of opening the discussion of this outstanding contribution by Dr. Baud and her co-workers at the Radium Institute of Paris, undoubtedly the most scientific center of radium therapy in France or in the world. Madam Curie and Professor Regaud, co-directors of the Curie Foundation, and their collaborators, have explored the unknown field of radioactivity and have waged war on cancer by research and therapeutics. The immense prestige of the Radium Institute of Paris, gained through thirty years of proficient and remarkable work in radium therapy, is constantly recognized by zealous therapeutic radiologists all over the world. The reliability of the statistical information presented by Dr. Baud is exceptional, as is the series of 105 cases reported in this study, in which the lesion appeared clinically to be limited to the cervix uteri. The 70 per cent rate of cure obtained in this series likewise is uncommon and exceptional. To consider post-treatment surgical intervention as an aid to increase the rate of five-year cures is fundamentally sound. It is evident that the surgeon will have no little task in attempting to improve on this high rate of salvage by his methods. Personally, I have always been in agreement with Dr. Regaud's statement, made twenty years ago, ". . . radium and roentgen therapy cannot and should not be divorced from surgery in the modern treatment of cancer." My experience in radium therapy and supplemental roentgen therapy in the care of patients with stage I cancers of the cervix uteri is indeed limited. However, in the consideration of post-treatment surgical intervention there are certain principles that seem to be in the realm of good judgment: 1. The initial radium treatment should be adequate for the control of the primary lesion. 2. When the patient, who has had an apparently satisfactory initial result from radium treatment, has a recurrence of the uterine discharge after an interval of three months or longer, she is a candidate for consideration of some type of surgical method rather than for a repetition of radium therapy. 3. The interval between radium therapy and surgical intervention should be sufficiently long to permit complete healing or the disappearance of any gross change in the tissue in the field of treatment. 4. The surgical method of treatment should meet the individual requirements of the patient.

Dr. Edwin C. Ernst, St. Louis: In the past there has been a tendency to employ variable sources of pelvic and uterine radium radiations, to the extent that the intensities were relatively increased in one or more capsules and correspondingly decreased in others. Thus, the distribution of the radium sources frequently was not employed according to the physical principles of uniform radiation. In my experience, equal spacing of equal radiation intensities is a technical physical requisite for reasonable protection of the normal bladder and rectal structures of the pelvis with maintenance or increase of the total radium dose specifically indicated in special cases. Pathologic analysis of uterine specimens that had been treated with radium has demonstrated the value of uniform distribution of the radiation. Unless one employs a sufficient number of cross fire areas or individual sections of radiation, one cannot hope to obtain a uniform and effective dose distribution to all of the potentially malignant structures, especially the areas behind or lateral to the cervical os region toward the parametrium. The two opposite planes of radiation, namely, the cervical canal and the vaginal vault fields, must be accurately and uniformly spaced; otherwise "hot spots" will develop. The distribution of the radiation sources within the cervical canal is less important and complicated than for the vaginal vault. The greater the number of sources of radiation in the vaginal vault, provided that these radiation sources are equally distributed with equal intensities, the more effective and more uniform will be the radiation throughout the entire pelvis, particularly the lateral fields. My co-workers and I have clinically diagnosed the condition in supposedly early cases as stage I, but, after surgical removal of diseased tissue, found that the line of metastasis extended laterally to such an extent that, if only two or even four sources of radiation had been employed in the vaginal vault, recurrence would have been inevitable unless a wide-angled radium bomb or large radium capsules (1.5 cm. in diameter), similar to those employed by some of our British colleagues, had been substituted. However, when six radium capsules are employed by means of an expanding colpostat, the distant fields are in closer contact with the radium sources. The average radiotherapist would not employ two or more radium needles in a single location, but rather places uniform sources of radiation intensities at equal distances, preferably 1 cm. apart. In either case, one either underradiates or overradiates certain portions of the pelvic uterine triangle.

PRIMARY PNEUMONITIS IN INFANCY

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The epidemic occurrence of pneumonitis in newborn and premature infants has been reported previously,[1] but it is the purpose of this communication to emphasize for the first time the sporadic occurrence of this disease. Further, its relationship to other mild diseases of the respiratory tract in older persons or adults is more clearly understood at the present time.

Primary pneumonitis was first recognized in January 1937 as a severe epidemic disease of newborn babies. It was evident at that time, although little emphasis was accorded to the fact, that all stages of involvement of the respiratory tract occurred in the various patients in the same ward. Some of the babies manifested sneezing and cough only; others had pronounced cough with inspiratory dyspnea, while the majority were severely ill with attacks of cyanosis and considerable dyspnea, leading to death in 28 per cent of the patients.

In the sporadic cases which co-workers and I have observed, the same symptom pattern of cough, dyspnea

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From the Department of Pediatrics, University of Minnesota Medical School.

Read before the Section on Pediatrics at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

[1] Adams, J. M.: A New Form of Virus Pneumonitis Occurring Epidemically Among Newborn Infants, Proc. Soc. Exper. Biol. & Med. **46:** 114, 1941; Primary Virus Pneumonitis with Cytoplasmic Inclusion Bodies: Study of an Epidemic Involving Thirty-Two Infants with Nine Deaths, J. A. M. A. **116:** 925 (March 8) 1941. Adams, J. M.; Green, R. G.; Evans, C. A., and Beach, N.: Primary Virus Pneumonitis: A Comparative Study of Two Epidemics, J. Pediat. **20:** 405, 1942.

and cyanosis has been manifested in the most acutely ill patients with pneumonitis. However, cases of mild disease with only minimal involvement of the respiratory tract occur. There may be little or no evidence of infection in the lower respiratory tract as determined by our usual methods. The age and maturity of the patient appear to be responsible in the main for the variations which are met with. In the epidemics which we have studied, the morbidity and mortality have been extremely high in prematurely born babies as contrasted with normal full term infants. The same striking difference in morbidity is observed when these babies are compared with older children and adults. The disease may be extremely mild or even latent in older persons.

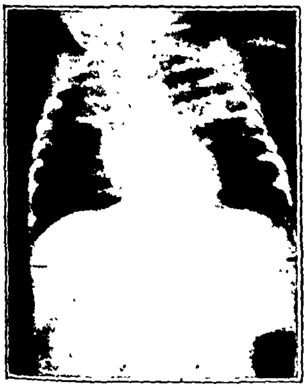

Fig. 1.—A roentgenogram of the lungs of a patient with primary pneumonitis, showing infiltration in the upper lobes of both lungs and minimal shadows in the lower lobe of the right lung.

In the typical sporadic case a history of mild disease of the respiratory tract in one or both of the parents is frequently elicited. It is difficult to define this illness in the contact person because of its mild or latent character, but usually there is subjective evidence of a "scratchy" sore throat, few nasal symptoms and mild or low grade febrile responses. The onset of the illness in the baby is rather abrupt, and at times the pulmonary symptoms may be the first observed. Sneezing and cough are the first symptoms in most of the patients. The temperature response is usually slight but may rise for a short time to 102 F. or 103 F. There are few physical findings in the cases of milder disease, but the more severely ill have marked dyspnea with retraction of the soft parts of the chest and some cyanosis. The latter signs may be severe, occurring in attacks usually at the time of handling or feeding of the patient. The exudate in the pharynx is abundant, whitish, thick and tenacious in character. Rales may be heard over the lung fields on careful examination. The roentgenogram of the lungs reveals diffuse shadows which are bronchial in distribution and usually widespread, but may be confined to a single lobe of the lung. A typical roentgenogram is shown in figure 1.

The diagnosis is made by the symptom pattern and by the rather characteristic shadows seen in the roentgenograms of the lungs. The diaphragms of the patient are depressed and there is evidence of emphysema in the typical case of primary pneumonitis. The white blood cell count is usually normal or only slightly elevated, with a predominance of lymphocytes.

Pharyngeal smears made from these patients in the acute stage of the disease reveal a great predominance of epithelial cells which contain typical cytoplasmic inclusion bodies. This finding is considered as helpful in the diagnosis, particularly when the inclusion bodies occur in large numbers in patients who satisfy the other criteria for primary pneumonitis. When stained with hematoxylin and eosin in the routine manner, the inclusion bodies are bright red or eosinophilic. There is a clear zone or halo about the inclusion body; they lie next to the nucleus of the cell and frequently indent it slightly.

The following report is that of a patient with a moderately acute respiratory illness which occurred sporadically in February 1947.

REPORT OF A CASE

The mother had a mild respiratory illness ten days prior to the first symptoms of the patient, and the father reported a similar illness which began six days prior to that of the baby. The parents' illnesses were marked by "scratchy" sore throats which lasted only a few days, and no temperature response was evident.

The baby, aged 5 months, was first observed to be "stuffed up" on Feb. 3, 1947, about 5 p. m. Sleep was fretful, and the parents were aroused at 3 a. m. on February 4 by severe coughing and choking by the patient. Its temperature at that time was 103 F. (rectal). The respiratory rate was 40 per minute and the pulse rate was 160 per minute. Sneezing, cough and fretfulness were the main symptoms. The temperature fell that morning and returned in the afternoon to 101.4 F. On February 4 the highest temperature recorded was 100.2 F.; on February 5, 100.8 F., and on February 6, 100.4 F. The temperature was normal by February 8. Most of the symptoms had subsided but some cough was present until February 10.

A white blood cell count on February 4 showed 6,250 cells with neutrophils 44 per cent and lymphocytes 56 per cent. No therapy other than control of humidity in the room was employed. The patient had a fair appetite throughout the illnesss.

Pharyngeal smears made from the patient on February 4, the first day of illness, revealed sheets of epithelial cells, many of which contained characteristic cytoplasmic inclusion bodies. A photomicrograph of a pharyngeal smear from this patient is shown in figure 2. The pharyngeal smears of the father and mother were both positive for inclusion bodies. The father's pharyngeal smear was almost identical with that of his baby, showing a rather high incidence of inclusion bodies per epithelial cell on the smear biopsy. There is a striking absence of leukocytic cells or bacteria in most of these pharyngeal smears from patients. Subsequent smears made from the patient and father showed a decreasing incidence of cells with inclusions during the next ten days.

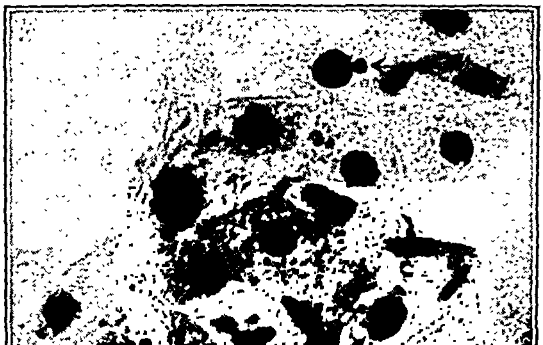

Fig. 2.—A photomicrograph of a pharyngeal smear from the patient described in the text, showing epithelial cells with cytoplasmic inclusion bodies, indicated by the arrows.

The treatment of babies with pneumonitis of mild or severe degree is largely symptomatic. Continuous oxygen has been beneficial to the infants who have signs of involvement of the lower respiratory tract. This is administered best by means of the small oxygen tent. The sulfonamide drugs and antibiotics have not been very useful, although they are sometimes employed to combat possible bacterial complications.

COMMENTS

Pneumonitis early in life presents a major problem to the physician. The first attack should logically be directed toward the prevention of this disease. Strict isolation of premature and newborn babies is the best and most practical method of control available today. The clinical and pathologic association of primary pneumonitis in infants with mild or latent disease of the respiratory tract in adults appears to be significant. Anatomical, physiologic and immunologic differences may account for the severity of this disease in premature and newborn babies, although within the same epidemic we have observed all degrees of involvement of the respiratory tract.

The question of immunity in some diseases of the respiratory tract is seriously questioned by reports now in the literature. The Commission on Acute Respiratory Diseases[2] demonstrated little or no protection in human volunteers when they were rechallenged with a bacteria-free filtrate some three weeks after recovery from their initial challenge with this material. If any immunity to this particular agent were present in the cases investigated, it was short lived or weak. On the other hand, they were able to show that human subjects were protected against rechallenge by a second and distinct agent which also caused mild primary disease of the respiratory tract. Prematurely born infants appear from our previously reported studies to be much more susceptible than newborn babies, suggesting strongly that the full term newborn infant is more highly protected, probably because of passive transfer of protective substance from its mother. Conclusive evidence is not yet available, but clinical experience strongly suggests that concentrated gamma globulin may contain prophylactic or protective substances against the agent responsible for primary pneumonitis in infancy.

Some comments on the pathologic changes in this disease are pertinent to the discussion. Many postmortem studies have revealed a distinct pathologic picture in the lungs of infants dying from the epidemic form of this disease. The prominent features are destruction and proliferation of bronchial and bronchiolar epithelium with peribronchial infiltration of mononuclear cells. Typical cytoplasmic inclusion bodies are found in the epithelial structures of the pulmonary tree. This includes the nasal, pharyngeal, trachial, bronchial and alveolar tissues. Because of the probable ubiquity of this agent, the interpretation of the finding of inclusion bodies must be made with caution. The same point of view must be assumed as is now held regarding the beta hemolytic streptococcus. The finding of this organism in the nose or throat does not always mean that the patient is suffering from invasion by the coccus. Likewise, the finding of inclusion bodies may or may not be significant. It seems to depend in the main on the correlation of this finding with clinical evidence of a characteristic disease, and whether they are found in large numbers exclusive of other findings in carefully prepared pharyngeal smears. The age of the patient probably plays a large role, also, in the occurrence of these bodies. They have not been described in lung sections from adults dying of nonbacterial pneumonia.

Experimental studies directed toward the causation of this disease are now in progress in our laboratory.

SUMMARY

Primary pneumonitis in infants occurring sporadically is described, and clinical and pathologic evidence is presented which appears to relate this disease directly to epidemic primary pneumonitis of infancy with cytoplasmic inclusion bodies.

The diagnosis and treatment of this disease are discussed briefly, with comments on the significance and interpretation of inclusion bodies in pharyngeal smears.

ABSTRACT OF DISCUSSION

Dr. C. B. Conklin, Washington, D. C.: Dr. Adams and his collaborators have brought to our attention a type of disease of the respiratory tract in infancy, often fatal, which has a high degree of communicability and gives evidence of having an etiologic agent heretofore not stressed. I shall consider first the clinical features and general pathology. Co-workers and I had occasion to study a sporadic outbreak of pneumonia in early infancy on the obstetric wards of a Washington Hospital. Cyanosis and dyspnea, preceded by running nose, sneezing and cough, were familiar phenomena, and Staphylococcus albus hemolyticus was the etiologic agent. The protocols of the necropsies corresponded in considerable detail with what was presented today. Dr. Adams in one of his papers calls attention to the similarity of the pathologic changes caused by the staphylococcus. Farber, who made a study of "inclusion disease," points to their occurrence in pneumonia, stating further that they are found in 25 per cent of pediatric autopsies. In 12 per cent of 183 autopsies they were found in salivary glands. Of significance are findings of Broadhurst, McLean and Taylor, who in 87 per cent of the throats of 100 students in Teachers College found inclusion bodies within epithelial cells. It was pointed out that the Bond-Mann stain, used for Negri bodies, was effective in staining the inclusions, suggesting a virus origin. Just before leaving Washington, through the courtesy of Colonel Ash at the Army Institute of Pathology, I had the opportunity of viewing slides obtained from a 2½ month old child that died with pneumonia. There were cells in lung tissue containing inclusions similar to those described. It may be observed that diseases associated with filtrable virus known at present are rare during the first year. I should like to ask whether the term "endemic" in Dr. Adams' series of cases would not perhaps be more appropriate? In view of the frequently reported finding of inclusions in cells of other organs such as salivary glands, it would seem of interest for Dr. Adams to report on other than the tissue of lungs. I am hopeful from the painstaking research now being pursued under Dr. Adams' direction that there will be found a pneumotropic virus the presence of which is strongly suggested.

Dr. Adams (closing): I am glad that Dr. Conklin brought up the subject of whooping cough because these babies do act clinically like many patients with pertussis. They have a spasmodic type of cough which is often brought on by handling. We have never heard a whoop, however. Of course, many persone with whooping cough do not whoop. Dr. Goodpasture described intranuclear inclusion bodies in pertussis, but nobody has observed, as far as I know, these bodies in our material. In Dr. Conklin's question about the endemic character of this disease, he may be referring to the endemics which undoubtedly have occurred.

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[2] Immunity on Reinoculation with Agents from the Two Types of Respiratory Illness and from Primary Atypical Pneumonia, Commission on Acute Respiratory Diseases, J. Clin. Investigation **26:** 974, 1947.

AUREOMYCIN THERAPY IN HUMAN BRUCELLOSIS DUE TO BRUCELLA MELITENSIS

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Experimental and clinical investigations have shown that a combination of streptomycin and sulfadiazine provides a specific therapy for human brucellosis.[1] The clinical material available at the University of Minnesota Hospitals has been restricted to those cases in which the disease was due to Brucella abortus. Because the combination of drugs altered favorably the clinical course of disease caused by Br. abortus, arrangements were made to treat a group of patients in México, D. F., Mexico, having the more malignant form of brucellosis due to Brucella melitensis. The plan was to treat 100 patients with streptomycin and sulfadiazine. Previous trials with sulfadiazine alone at the Mexico General Hospital had shown that only an occasional case of brucellosis was improved after treatment. Only those patients were to be selected from whose blood cultures Br. melitensis was isolated. The studies began early in 1948. In general, a standardized schedule of doses was employed. Streptomycin was injected intramuscularly in a dose of 0.5 Gm. every six hours for two weeks. Sulfadiazine was simultaneously administered orally with an initial dose of 1 Gm. and then 1 Gm. three times a day for the same period of time. At the conclusion of this period of fourteen days of treatment blood cultures were made, and also at monthly intervals thereafter. To date this combination has been used in treatment in 65 bacteriologically proved cases of acute and chronic brucellosis due to Br. melitensis, and the details of this clinical experience will be presented elsewhere. After approximately one-half the patients had been treated, it became apparent that with the doses used streptomycin was causing vestibular dysfunction in a significant group of cases and that the clinical results were not as satisfactory as had been obtained in infections with Br. abortus in the United States. Because streptomycin had to be administered intramuscularly hospitalization was desirable, and hospital beds were always at a premium. It became obvious that in a country like Mexico, where brucellosis involved thousands of persons and where there were few hospital beds, a more satisfactory form of specific therapy would be one that included a drug or drugs which could be given orally and which would induce no serious toxic reactions. For these reasons, aureomycin was substituted for streptomycin in the therapy of a group of patients.

Aureomycin is an antibiotic which Duggar of the Lederle Laboratories obtained from the mold Streptomyces aureofaciens. The late Dr. Y. Subbarow, Director of Research of Lederle Laboratories, placed aureomycin at our disposal in March 1948, for experimental studies on brucellosis at the University of Minnesota Hospitals. Preliminary studies by Dr. James Shaffer showed that aureomycin did possess definite antibrucella activity against strains isolated from human beings. These investigations were extended in our laboratories by Dr. Ellard Yow and Dr. Robert Magoffin, who made comparative studies with aureomycin and streptomycin. Both in vitro and in the experimentally infected chick embryo, it was shown that weight for weight streptomycin was more active against the Brucella of all three species than aureomycin. These studies will be published in detail elsewhere. It could be deduced, then, that streptomycin would be more effective in brucellosis in human beings than aureomycin. Aureomycin, however, could be administered orally to ambulatory patients and had been found to produce only mild side effects in patients treated earlier with this antibiotic for other diseases. Because of these properties, the oral administration of aureomycin with sulfadiazine was begun in July 1948 in a group of patients with infections due to Br. melitensis. The clinical results far surpassed the expectations, and it later became evident that aureomycin alone, in relatively small oral doses, altered the clinical course of the disease in a most dramatic way. Though a longer follow-up period is essential for the complete evaluation of aureomycin, a report of the experience to date with this antibiotic is warranted because of the remarkable clinical results that have been obtained. It should be emphasized that prior to evaluation of treatment with aureomycin the clinical course of melitensis infections had been observed in hundreds of untreated persons, in those receiving vaccines, in patients receiving sulfonamide drugs, and in patients receiving streptomycin with and without sulfonamide drugs. A consistent and abrupt change in the clinical course of the disease for the better had been observed only in patients receiving aureomycin.

METHODS OF STUDY

This report is based on observations made in 24 patients from whose blood one or more cultures of proved Br. melitensis was obtained. The ages of the patients varied from 4 to 54 years. There were 16 female and 8 male patients. The duration of the illness varied from a few days to one year. Some of the patients were extremely ill, hospitalization being required; 1 patient (case 15, table) was so critically ill that little hope was held out for her eventual recovery. Six of the 24 patients had previously been unsuccessfully treated with a combination of streptomycin and sulfadiazine. Thirteen of the 24 patients received aureomycin as ambulatory outpatients. The results of treatment in the ambulatory group were as satisfactory as those obtained in the hospitalized patients and demonstrated the effectiveness of aureomycin in the absence of bed rest.

Since aureomycin was being substituted for streptomycin and initial experimental studies indicated that aureomycin was less active against Brucella than streptomycin, the first 16 patients treated received both aureomycin and sulfadiazine. At first, the dose of aureomycin was 0.5 Gm. every six hours for nine to thirteen days, with 1 to 3 Gm. of sulfadiazine daily for a similar period of time. When it became apparent that unusually

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Sulfadiazine was supplied by Lederle Laboratories.

Aureomycin ("duomycin") was supplied by Lederle Laboratories.

Streptomycin was supplied by Merck and Company, Commercial Solvents Corporation and Eli L[illegible]

From the Division of Inte [illegible] of Minnesota Hospitals and Medical School, [illegible] Mexico General Hospital, México, D. F., Mexico.

This investigation was supported (in part) by a research grant from the Division of Research Grants and Fellowships of the National Institute of Health, United States Public Health Service, and by a grant from Lederle Laboratories.

[1] (*a*) Pulaski, E. J., and Amspacher, W. H.: Streptomycin Therapy in Brucellosis, Bull. U. S. Army M. Dept. **7:** 221 (Jan.) 1947. (*b*) Eisele, C. W., and McCullough, N. B.: Combined Streptomycin and Sulfadiazine Treatment in Brucellosis, J. A. M. A. **135:** 1053 (Dec. 20) 1947. (*c*) Spink, W. W.; Hall, W. H.; Shaffer, J. M., and Braude, A. I.: Human Brucellosis: Its Specific Treatment with a Combination of Streptomycin and Sulfadiazine, J. A. M. A. **136:** 382 (Feb. 7) 1948. (*d*) Shaffer, J. M., and Spink, W. W.: Therapy of Experimental Brucella Infection in the Developing Chick Embryo: II. Infection and Therapy via the Yolk Sac, J. Immunol. **59:** 393 (Aug.) 1948. (*e*) Shaffer, J. M., and Spink, W. W.: Therapy of Experimental Brucella Infection in the Developing Chick Embryo: III. The Synergistic Action of Streptomycin and Sulfadiazine, J. Immunol., to be published. (*f*) Bryer, M. S.; Schoenbach, E. B.; Chandler, C. A.; Bliss, E. A., and Long, P. H.: Aureomycin: Experimental and Clinical Investigations, J. A. M. A. **138:** 117 (Sept. 11) 1948.

good therapeutic results were being obtained with this combination, a group of 8 patients received only aureomycin, with equally good results. The initial doses of aureomycin were reduced because of undesirable side reactions, which will be described shortly. On the first day of treatment, a total of 0.1 Gm. was given in divided doses; on the second day the total dose was 0.6 Gm.; on the third day it was 1.6 Gm., and treatment with 2 Gm., the maximum total daily dose, was begun on the fourth day. Treatment was carried out for a total of eleven days. That the aureomycin was being absorbed from the intestinal tract was proved by observation of the drug in the cerebrospinal fluid of 1 patient and in the urine of several patients. Blood cultures were made at the conclusion of therapy and then at weekly intervals thereafter.

RESULTS

The pertinent clinical features relating to these patients are presented in the table. Every patient was febrile before therapy was instituted, and it is to be noted that within two to three days after treatment was started the temperatures usually became normal. It is seen that 2 patients each received two courses of therapy with aureomycin. Although considerable improvement resulted from the first course and the blood cultures remained sterile, a second course was given because of recurrent fever. Case 22 was an example of a case of severe and chronic brucellosis that had persisted for one year. The patient was severely debilitated. She apparently recovered completely from active infection after treatment with aureomycin. One patient (case 8) was a riding instructor, and his illness had incapacitated him for five months. Within one week after completing treatment he was afebrile and was able to resume riding on a horse. Another patient (case 14) was a young housewife who was acutely ill and pregnant six months. Abortion was avoided probably as a result of treatment, since this is a common complication of bacteremic melitensis infections occurring during pregnancy. The most dramatic recovery was observed in case 15. A 23 year old housewife became critically ill six days post partum. She continued to deteriorate for six and a half months, with temperature as high as 105 F., purpura hemorrhagica, splenomegaly and anemia. Five days after treatment with aureomycin the temperature became normal, the purpura subsided and the spleen was no longer palpable. After the completion of therapy, blood cultures became sterile. Another critically ill patient (case 17) was extremely emaciated and had been ill for five months. During this time, five cultures of blood were positive for Br. melitensis. Recovery from the disease had not followed treatment with streptomycin and sulfadiazine. She was given only aureomycin in a dose of 18.8 Gm. over a period of fourteen days. She became asymptomatic two days after treatment was started, and during the month following the completion of treatment, two cultures of blood remained sterile; she was afebrile and had made a pronounced gain in weight and in strength. A complication of melitensis infections that is seen rather frequently is severe pain radiating down one or both sciatic nerves. This is usually totally incapacitating, so that the patients are unable to walk. Cases 19 and 21 represent instances of this complication in which prompt and complete recovery followed aureomycin therapy. Case 20 was an instance of severe brucellosis occurring in a woman with thyrotoxicosis. Prompt recovery from her infection occurred after treatment with aureomycin, but the evidence of thyrotoxicosis persisted.

It is significant that prompt improvement occurred in every one of the patients treated. Blood cultures taken after the completion of therapy had remained sterile in 10 of the patients, where enough time had elapsed to make such information of value, and in only one instance were organisms recovered. There is some doubt in this one positive culture, since it might indicate a contaminant. The patient from whom this culture was obtained had remained well as of the time of reporting.

SIDE EFFECTS FROM AUREOMYCIN

Besides the remarkable immediate benefit that the patients obtained soon after treatment was started, there were no serious toxic complications resulting from aureomycin. One reaction that can be ascribed only to the drug was seen so frequently that it must be detailed. It was seen in 12 of the 24 patients about eight to twelve hours after the first oral dose of aureomycin. The patients experienced an abrupt rise in temperature over that which had been present previously. This single spike in temperature was occasionally accompanied by a shocklike picture with a drop in blood pressure and tachycardia. Although some apprehension was attached to these phenomena, no serious consequences followed. It was observed that this type of reaction occurred when a dose of 0.5 Gm. was given every six hours. When smaller doses of aureomycin were administered initially, fewer of these effects were seen. This is the reason that, as time went on, an initial total daily dose of only 0.1 Gm. was given, but gradually increased so that the total daily dose was 2 Gm. on the fourth day of treatment.

The only other side effects pertained to the gastrointestinal tract. These consisted of nausea, vomiting and mild diarrhea. However, the manifestations were transitory and not severe enough to warrant discontinuation of therapy.

COMMENT

In the search for specific therapy in brucellosis in human beings the objective has been to utilize a drug or drugs that would eradicate the Brucella from the tissues. The ideal agent would be one that could be administered orally and that provoked no serious toxic effects. Besides accomplishing its primary purpose, such a drug would permit the treatment of outpatients or patients in the home, making hospitalization not mandatory. As far as the treatment of brucellosis in human beings in Mexico is concerned, aureomycin may fulfil the requirements of a much needed specific drug. Few beds in the hospitals are available for these patients, and even if beds were available the average patient could not afford the expense. Many of the patients are already critically ill, and serious toxic reactions from a drug are not desirable. To date, aureomycin appears to fulfil the requirements of a more satisfactory therapeutic agent. Whether aureomycin will prove to be equally effective in infections due to Br. abortus remains to be seen. One report has stated that a patient seriously ill with an infection due to Brucella suis recovered after the use of aureomycin and remained well.[1f]

From a biologic point of view one of the remarkable features of aureomycin is that it should be more effective than streptomycin in the most serious type of brucellosis in human beings, and yet in vitro and in the infected chick embryo aureomycin does not inhibit the multiplication of Brucella as effectively as streptomy-

Clinical Data on 24 Patients with Brucellosis Due to Brucella Melitensis and Treated with Aureomycin

Case No.	Age	Sex	Temperature (F.) and Duration Before Treatment	Number Positive Blood Cultures	Complications	Previous Therapy	Aureomycin, Total Dose, Gm. Period, Days	Sulfadiazine, Total Dose Gm. Period, Days	Duration of Fever After First Dose of Aureomycin, Days	Side Effects	Results and Comments
1	20	F	102 to 104.2 for 5 mo.	2	None	None	(a) 15.5/9 (b) 11.3/9	21/9 None	2 2	Diarrhea; vomiting (1 day)	Received 2 courses of aureomycin; critically ill before first course and showed dramatic clinical improvement with sterilization of blood; one month later fever returned, but culture remained negative; complete recovery after second course; relapse possibly due to inadequate dosage
2	35	F	99.6 to 102.6 for 7 wk.	1	None	None	20/10	31.5/10	4	None	Clinical recovery; no relapse for 7 weeks; four negative cultures after treatment
3	6	M	101 to 105 for 3 mo.	5	None	None	(a) 7.9/11 (b) 7.6/10	8.8/11 6.0/10	4	None	Clinical recovery after first course of treatment except that increased temperature, to 99 F., recurred after 9 days and persisted for 17 days; child remained asymptomatic otherwise, and 2 cultures were negative
4	23	F	103 to 105.4 for 10 days	1	None	None	20/10	33/11	3	None	Clinical recovery with sterilization of blood after treatment; no recurrence for 6 weeks
5	48	F	101.6 to 105 for 4½ mo.	1	None	Streptomycin, 28 Gm. Sulfadiazine, 36 Gm.	14.7/9	27/9	4	None	Clinical recovery with aureomycin; received aureomycin because of clinical relapse following combined streptomycin and sulfadiazine
6	54	F	100 to 104 for 6 mo.	7	None	Streptomycin, 28 Gm. Sulfadiazine, 36 Gm.	15.5/10	30/10	3	None	Clinical recovery with aureomycin after unsuccessful therapy with streptomycin and sulfadiazine
7	22	M	99.8 to 104 for 1 yr.	1	None	None	20.5/12	36/12	5	None	Clinical recovery in a severely debilitated chronically ill patient
8	54	M	99 to 104.6 for 5 mo.	5	None	None	19.9/13	39/13	5	None	Clinical recovery; patient was a riding (horse) instructor who resumed riding 20 days after beginning treatment
9	30	F	100 to 104 for 7½ wk.	2	None	None	25.7/15	30/10	4	Headache; nausea; nervousness	Clinical recovery
10	4	F	99 to 101.6 for 4½ mo.	4	None	Streptomycin, 8.5 Gm. Sulfadiazine, 18 Gm.	8.6/11	11/11	2	None	Striking clinical improvement; temperature of 99 F. persisted after therapy in spite of lack of symptoms; blood sterile
11	52	F	104 to 105.6 for 7 wk.	1	None	None	19.0/13	33/13	7	(1) Hyperpyrexia with peripheral vascular collapse on second day; (2) diarrhea	Acute; clinical recovery
12	24	F	100 to 106 for 8 mo. 21 days	4	None	Streptomycin, 28 Gm. Sulfadiazine, 28 Gm.	20.3/13	39/13	4	None	Treated with [illegible] apy
13	43	M	99.6 to 104 for 5 mo.	6	None	None	20.0/12	38/12	3	None	Clinical recovery with sterilization of blood on third day of therapy
14	24	F	99 to 100 for 7 wk.	2	Pregnant 6 mo.	None	21.6/13	39/13	5	Nausea; diarrhea	Clinical recovery with apparently normal fetus; abortion probably prevented by aureomycin
15	23	F	103 to 105 for 6½ mo.	1	Purpura hemorrhagica with decided splenomegaly and severe anemia	None	20.1/12	24/8	3	None	Dramatic recovery in critically ill patient who was expected to die; illness began 6 days post partum and was marked by purpura hemorrhagica, splenomegaly and anemia; complete subsidence of fever and symptoms by fifth day of aureomycin
16	28	M	99.6 to 104.6 for 7½ mo.	1	None	None	20.3/11	33/11	4	Diarrhea 1 day	Clinical recovery by fourth day of aureomycin
17	15	F	99.5 to 105 for 5 mo.	5	Emaciation; pulmonary edema	Streptomycin, 28 Gm. Sulfadiazine, 66 Gm.	18.8/14	None	3	None	Prompt clinical recovery in emaciated young female patient in terminal state at commencement of aureomycin therapy
18	22	F	100.5 to 105.8 for 4 mo. 21 days	3	None	None	18.1/11	None	3	None	Immediate improvement; no symptoms or fever after 2.1 Gm. of aureomycin
19	23	M	99.6 to 102 for 5½ mo.	5	Sciatic syndrome	None	20.1/12	None	3	Nausea	Recovery; asymptomatic 2 days after commencement of aureomycin
20	24	F	99.6 to 104 for 3 mo. 3 wk.	1	Thyrotoxicosis	None	20.3/11	None	3	Diarrhea	Critical condition before treatment; decided clinical improvement with recovery from all symptoms except those related to thyrotoxicosis
21	16	F	99.6 to 102 for 6 mo.	3	Sciatic syndrome	None	20.3/11	None	0	None	Clinical recovery; had been unable to walk because of sciatic syndrome, which disappeared
22	38	M	99.6 to 104 for 80 days	3	52 lb. (24 Kg.) weight loss	Streptomycin, 11 Gm. Sulfadiazine, 32 Gm.	22.3/13	None	3	None	Clinical recovery in emaciated patient who had failed to recover after combined streptomycin-sulfadiazine therapy
23	9	F	100 to 104 for 4½ mo.	2	None	None	11.2/11	None	5	None	Clinical recovery except for slight pain in knee and slight generalized weakness
24	15	M	99.4 to 104 for 5 mo.	4	None	None	9.3/11	None	4	None	Clinical recovery

cin. Experiments are now under way comparing these agents in larger infected animals, utilizing all three species of Brucella.

We should like to emphasize that this report is concerned only with the immediate therapeutic value of aureomycin in brucellosis in human beings caused by Br. melitensis. In such a disease, a long follow-up study will be necessary to evaluate the drug completely, and evaluation of treatment of the disease due to the other two species will be necessary. But the immediate results of treatment have been so encouraging and so unexpected that this report is being made.

The recommended doses of aureomycin for melitensis infections is as follows: a total of 0.1 Gm. given the first day in four divided doses, a total of 0.6 Gm. the second day, 1.6 Gm. the third day and 2 Gm. the fourth day. The drug should be administered for a total of ten days. This schedule is recommended until more information is forthcoming concerning the "Herxheimer-like" reactions and the amounts necessary to produce permanent recovery. Similar doses may be necessary in the cases of severe infections due to Br. suis and Br. abortus. A few patients treated at the University of Minnesota Hospitals have been given from 0.5 to 1.5 Gm. every six hours for ten days without ill effect and without an initial spiking of temperature and drop in blood pressure, but these infections were relatively mild. To date, we have had no experience with aureomycin given parenterally for brucellosis.

SUMMARY

Aureomycin has been administered orally to 24 patients having bacteriologic proved acute and chronic brucellosis due to Br. melitensis. The immediate therapeutic results have surpassed those obtained with any other specific therapy, including a combination of streptomycin and sulfadiazine. The toxic reactions due to aureomycin have been mild. Unless small initial doses of the drug are used, a febrile reaction associated with a drop in blood pressure may be observed. The severity and frequency of these phenomena have been reduced with the administration of small doses of drug at the beginning of treatment. It is emphasized that these encouraging results in the therapy of human brucellosis are concerned only with the immediate effects on the clinical course. These patients are being followed closely for clinical and bacteriologic relapses, and only after a lapse of several months can a definitive statement be forthcoming.

ADDENDUM

Further bacteriologic studies have been carried out over a period of one to three months following therapy. A total of eighty-two cultures of blood from the 24 subjects have been studied. One patient (case 9) has had no symptoms, but there has been slight fever and one of four cultures taken after treatment showed Brucella melitensis. Another patient (case 15) has had fever; the spleen has been palpable, and one of four cultures yielded Br. melitensis. It is to be recalled that this patient had an extremely severe infection and was not expected to live before treatment was started. One patient (case 14), who is now pregnant eight months and who had no fever or symptoms of brucellosis, had one of four blood cultures positive for Br. melitensis.

It is possible that the use of larger doses of aureomycin will prevent bacteriologic relapses. It is now recommended that a total daily dose of 4 to 6 Gm. for two weeks to be used rather than 2 Gm.

PANCYTOPENIA FROM "MESANTOIN"

Report of Two Cases

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"Mesantoin" (3-methyl-5,5-phenylethyl hydantoin) is one of the newer anticonvulsant drugs and is chemically and pharmacologically related to "dilantin" (diphenylhydantoin sodium). Kozol[1] and Loscalzo[2] reported that this drug is effective in the control of grand mal seizures and may be useful in patients who are refractory or intolerant to "dilantin." They noted no serious toxicities, although "in about 40 per cent of the cases the lymphocytes were moderately increased at the expense of the neutrophiles."[2] Cutaneous eruptions have occurred in 4.5 to 14 per cent of the cases,[3] and Ruskin[4] recently reported a fatal case of dermatitis bullosa medicamentosa due to "mesantoin." A search of the literature reveals only mention of 1 case of serious blood dyscrasia ascribed to "mesantoin" alone.[5] On review of the case of fatal aplastic anemia following the use of "tridione" (trimethadione) reported by Harrison and his co-workers;[6] it is noted that "mesantoin" was concomitantly employed.[7]

During the past year, 1 fatal and 1 reversible case of profound pancytopenia have been observed in patients receiving "mesantoin," and they form the basis of this communication.

REPORT OF CASES

CASE 1.—I. T. L., a 16 year old Negro school boy, was admitted to the Presbyterian Hospital on Jan. 26, 1948, complaining of fever and joint pains of six weeks' duration. Since the age of 7, he had had epileptic equivalents characterized by attacks of periumbilical pain and amnesia. Phenobarbital was used for three years with moderate success, and "dilantin" was taken during the succeeding four years, despite which grand mal seizures had appeared at the age of 15. Because of undesirable nonhematologic toxicities, treatment with "dilantin" was stopped and "mesantoin" therapy, 0.3 Gm. daily, was started on June 9, 1947. During the summer of that year he experienced a generalized erythematous eruption, which subsided with local therapy given by his private physician. In September, severe pruritus and several small ulcers appeared around the ankles. During early December, he experienced the onset of cough, pains in the left side of the chest and left arm, fever, chilliness, night sweats and anorexia. In the next four weeks he lost 8 pounds (3.6 Kg.) of weight. His physician prescribed penicillin tablets and codeine cough syrup, which were taken intermittently. On December 22, the "mesantoin" dosage was increased to 0.4 Gm. daily, and he remained at home for the next month. In this interval, his constitutional symptoms persisted, and he experienced pain and swelling of the wrists and ankles, as well as nodules on the forearms. He was next seen on Jan. 26, 1948,

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Fr[illegible] College of Physicians and Surgeons, [illegible] esbyterian Hospital, New York.

1. [illegible] with the New Drug: 3-Methyl, 5,5 P[illegible] Am. J. Psychiat. **103:** 154 (Sept.) 1946.

2. Loscalzo, A. E.: The Control of Epilepsy with 3-Methyl, 5,5 Phenylethylhydantoin and Phenobarbital, A. Research Nerv. & Ment. Dis., Proc. **26:** 412, 1947.

3. Kozol.[1] Loscalzo.[2] Lennox, W. G.: Two New Drugs in Epilepsy Therapy, Am. J. Psychiat. **103:** 159 (Sept.) 1946.

4. Ruskin, D. B.: Fulminating Dermatitis Bullosa Medicamentosa Due to Mesantoin, J. A. M. A. **137:** 1031 (July 17) 1948.

5. A case of aplastic anemia ascribed to "mesantoin" is mentioned in an editorial footnote following Kozol, H. L.: The Treatment of Epilepsy with Methyl-Phenyl-Ethyl-Hydantoin (Mesantoin), A. Research Nerv. & Ment. Dis., Proc. **26:** 404, 1947.

6. Harrison, F. F.; Johnson, R. D., and Ayer, D.: Fatal Aplastic Anemia Following Use of Tridione and a Hydantoin, J. A. M. A. **132:** 11 (Sept. 7) 1946.

7. Since submission of this paper, another case of pancytopenia following "mesantoin" has been reported: Bloom, N.; Lynch, J. P., and Brick, H.: *"Mesantoin" Poisoning with Aplastic Anemia and Recovery,* J. A. M. A. **138:** 498 (Oct. 16) 1948.

when he was admitted to the Presbyterian Hospital. At no time had he taken "tridione."

Physical examination on admission revealed an acutely ill youth with a temperature of 103 F., pulse rate of 110 and respirations 22 per minute. The wrists, ankles and right elbow were swollen and tender. There were several erythematous tender nodules, ½ cm. in diameter, on the dorsal surfaces of the forearms. The heart and lungs were normal; no abdominal organs were palpable, and there was no significant lymphadenopathy.

Laboratory studies revealed hemoglobin of 10.5 Gm. per hundred cubic centimeters and red blood cells of 3,380,000 per cubic millimeter. The leukocyte count was 1,400 per cubic millimeter, with a differential count of neutrophils 34 per cent, lymphocytes 62 per cent and eosinophils 4 per cent. The platelet count was 70,000 per cubic millimeter, bleeding time 2.5 minutes, venous clotting time 3.5 minutes and prothrombin time 17.8 seconds (normal: 14 seconds). The reaction to the sickling test was negative; red blood cell fragility was normal; Westergren erythrocyte sedimentation rate was 95 mm. after one hour. Urinalysis revealed albumin (1 plus), a moderate number of red cells and a few white cells per high power field. The guaiac test for occult blood in the stool was negative in result. Other results were: bilirubin 0.2 mg. per hundred cubic centimeters, negative Kline reaction, antistreptolysin titer 625, heterophil agglutinin dilution 1:16 and negative agglutinations with typhoid, paratyphoid, Brucella abortus, Bacillus proteus X19 and Bacillus tularense. Repeated blood cultures were sterile during the first ten hospital days. Thereafter, hemolytic Bacillus pyocyaneus was isolated from three successive cultures.

In spite of large doses of penicillin from the first day, streptomycin from the fourth day and sulfadiazine from the twelfth day, his condition deteriorated rapidly with sustained temperatures between 103 and 105 F. He received five transfusions of whole blood, which satisfactorily maintained his hemoglobin and red blood cell count. Nevertheless, the leukopenia, neutropenia and thrombocytopenia progressed. Moderate epistaxis, bleeding gums, hematemeses, melena and gross hematuria appeared. He became jaundiced on the tenth hospital day. Two days later the liver became enlarged to 5 cm. below the costal margin and the serum bilirubin rose to 13.8 mg. per hundred cubic centimeters. The cephalin flocculation reaction was 4 plus, thymol turbidity 4 plus and alkaline phosphatase 7.1 Bodansky units per hundred cubic centimeters. On the twelfth hospital day the hemoglobin was 8 Gm. per hundred cubic centimeters, white blood cell count was 500 per cubic millimeter, neutrophils 6 per cent, lymphocytes 90 per cent and monocytes 4 per cent. No platelets were seen on the smear or in the platelet count. Smears made from sternal marrow aspiration performed at this time were compatible with marrow aplasia. On the afternoon of the twelfth hospital day pulmonary edema developed; he died the following morning.

At autopsy, submucosal hemorrhages were found in the bronchi, intestines and renal pelves. Subepicardial and subpleural hemorrhages were also present. The liver weighed 2,400 Gm., but was essentially normal, grossly and microscopically. The spleen weighed 400 Gm. and was histologically normal. There was moderate pulmonary edema as well as necrotizing pneumonia involving both lower lobes. The bone marrow was brick red in appearance. Microscopically, there was increased fat and a definitely decreased number of cellular elements, most striking in the myeloid series. The erythrocyte was the predominant cell, and although normoblasts and metamyelocytes were noted, few immature forms were present. Megakaryocytes were rarely found. The anatomic diagnosis was aplasia, bone marrow, myeloid and thrombocytic elements.

Case 2.—F. P., a 31 year old white male store clerk, entered the Presbyterian Hospital on April 7, 1948, complaining of increasing malaise for one month, with sore throat, shaking chills, fever and epistaxis for two weeks.

He had been in good health except for petit mal epilepsy since 1936, associated with grand mal attacks since 1939. Complete neurologic and medical studies in 1943 were normal except for the electroencephalographic pattern, which was mildly abnormal and consistent with a convulsive disorder. Routine blood studies at that time revealed hemoglobin of 15.4 Gm. per hundred cubic centimeters, red cells 5,250,000 per cubic millimeter and white cells 4,050 per cubic millimeter, with 54 per cent neutrophils, 33 per cent lymphocytes and 13 per cent monocytes. The peripheral blood smear was described as normal. He was treated with "dilantin," 0.3 Gm., and phenobarbital, 0.09 Gm., daily. These medications resulted in the satisfactory control of his epilepsy, but on Oct. 17, 1947, because of the increasing frequency of grand mal seizures, treatment with "dilantin" was discontinued and "mesantoin" was taken in dosage of 0.3 Gm. daily. He continued the same phenobarbital dosage and took both "mesantoin" and phenobarbital daily until his admission to the hospital approximately five months later. He had never taken "tridione."

One month before entry to the hospital, the patient noted the insidious onset of weakness and malaise with mild sore throat. These were steadily progressive until two weeks later, when he had a shaking chill and fever and soon persistent epistaxis and oozing gums developed. He was given penicillin and sulfadiazine by his private physician for four days, with only slight and transient benefit. Two days before entry, epistaxis became brisk and tarry stools were observed for the first time. Because of rapidly progressive weakness, fever and pallor, he was referred to this institution.

The patient appeared gravely ill, with considerable pallor, weakness and diaphoresis. His temperature was 104.2 F.; pulse rate 110 and respirations 26 per minute. Blood pressure was 130 systolic and 70 diastolic. There was a slow ooze of blood from nose and gums and in the pharynx, as well as fresh and old hemorrhages in the eyegrounds. There was no enlargement of the lymph nodes, liver or spleen. The results of the remainder of the physical examination were essentially normal.

Laboratory studies revealed hemoglobin of 4.8 Gm. per hundred cubic centimeters and a red blood cell count of 2,100,000 per cubic millimeter. The leukocyte count was 300 per cubic millimeter, with 100 per cent lymphocytes. The platelet count was 10,000 per cubic millimeter, reticulocytes 0.5 per cent; hematocrit 14.5 per cent and Westergren sedimentation rate 150 mm. in one hour. The urine contained albumin (1 plus) and rare red cells. The stools were dark black and strongly guaiac positive. The venous clotting time was 25 minutes, prothrombin time 16.0 seconds (normal: 14 seconds) and capillary fragility decidedly increased as judged by tourniquet test. Cultures of nose, throat and blood were negative. The roentgenogram of the chest revealed no abnormalities. Sternal marrow aspiration revealed a decrease in cellularity, with granulopoiesis arrested at the myelocyte level. Erythropoiesis was qualitatively normal, and the lymphocytes were relatively increased.

Ten liters of blood were administered during the first two weeks in order to maintain his hemoglobin near 7 Gm. per hundred cubic centimeters. Penicillin and streptomycin were given prophylactically and phenobarbital was continued as an anticonvulsant. Rutin, ascorbic acid and pentnucleotide were administered empirically.

The patient remained critically ill, with persistent spiking temperatures from 101 to 105 F. during the first two hospital weeks. In the third week there was an abrupt change in the clinical picture. Fever disappeared, bleeding ceased, appetite increased and strength returned. The peripheral blood picture, however, did not reflect this improvement. No neutrophils were apparent on examination of the blood smear until the end of the third week. By the seventh week an increase to a total leukocyte count of 1,500 per cubic millimeter, with 27 per cent neutrophils, had occurred.

At the time of discharge, after three months of hospitalization, his hemoglobin was 12.7 Gm. per hundred cubic centimeters, red blood cell count 4,700,000 per cubic millimeter and white blood cell count 1,850 per cubic millimeter, with neutrophils 46 per cent, lymphocytes 52 per cent and eosinophils 2 per cent. There were 36,000 platelets per cubic millimeter. Four weeks later, on a clinic visit, his general condition was maintained, and the hemoglobin was 14.5 Gm. per hundred cubic centimeters, red blood cells 4,830,000 per cubic millimeter and white blood cells 5,000 per cubic millimeter, with neutrophils 51 per cent, lymphocytes 43 per cent and monocytes 5 per cent. The platelet count was 202,000 per cubic millimeter.

SUMMARY

Two patients are reported in whom profound pancytopenia occurred following the use of the anticonvulsant agent "mesantoin" (methylphenylethyl hydantoin).

COMBINED CALCIFEROL AND STREPTOMYCIN IN LUPUS VULGARIS

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After viosterol was made available, French investigators,[1] mindful of the beneficent action of sunshine, used vitamin D and found it useful in the treatment of some forms of tuberculosis. This train led Charpy[2] to use calciferol (vitamin D_2) with calcium in a series of patients with lupus vulgaris. His results were astonishingly brilliant. During the war years when Charpy's work was prosecuted, Dowling and Thomas,[3] independently in England, treated cutaneous tuberculosis, too, with calciferol. They reported approximately the same good results that Charpy had achieved.

The latter had insisted that the calciferol had to be administered in alcoholic solution according to a certain schedule in conjunction with calcium. Dowling and Thomas, while using calciferol, administered it differently and yet obtained comparable results. Calciferol in this country is available in two forms, in propylene glycol or in sesame oil solution. The sesame oil solution is easier to use because it is more concentrated and can be administered in gelatin capsules. It appears that alcoholic solutions, exclusively, such as Charpy insisted must be used for good effects, are unnecessary. Equally good results seem to attend the administration of calciferol in oil, the medium available to Americans.

Feldman and Hinshaw[4] investigated the use of streptomycin in tuberculosis of animals and human beings. Later these same authors with O'Leary and Ceder[5] reported on the use of this drug in various forms of cutaneous tuberculosis. This study included observations on the use of "promizole" (4,2′-diaminophenyl-5′-thiazolylsulfone), a sulfonamide drug, in some of the subjects of this group. They felt that "promizole" was ineffective, but they were encouraged by the results from the use of streptomycin. Smith and McClosky[6] combined the use of "promin" (sodium p,-p′-diaminodiphenylsulfone-N,N′didextrose sulfonate) and streptomycin with promising results. They obtained in guinea pigs infected with experimental tuberculosis a greater therapeutic effect than the sum of the effects of the individual drugs.

My colleagues and I had been using various preparations of vitamin D for the treatment of different forms of tuberculosis of the skin for several years. The results at times were encouraging, but in the main were mediocre. When the work of Charpy and that of Dowling and Thomas became known, we began the use of calciferol. Our method was to use calciferol in doses of 100,000 to 150,000 units daily continuously for a number of months. We soon found, like the original authors, that most of the good results to be expected occurred during the first nine months.

Only 1 patient was intolerant of this form of treatment, and it had to be abandoned. He had severe gastrointestinal symptoms and a blood calcium level of 13.1 mg. per hundred cubic centimeters. Observations were made on the blood with regard to the levels of calcium, phosphorus and protein, as well as other matters. None of these, however, helped to explain the means by which calciferol exerted its beneficient action. This work will be reported elsewhere.

The use of calciferol in cutaneous tuberculosis is one of the important medical advances that came out of the war period. It was found by the original investigators and other observers, as well as by us, that many patients adequately treated as to dosage and for sufficient lengths of time were left with residual activity in the lesions. (Charpy cauterized these remaining loci.) When streptomycin became available, we combined its use with that of calciferol. Its cost and the somewhat extended period required for its effectiveness in tuberculosis forbid its free use in charity patients. The latter class, though, is the one in greatest need, in whom cutaneous tuberculosis is most prevalent. We compromised this excessive cost by using calciferol until the cutaneous lesions no longer showed improvement and only then added the administration of streptomycin. We believe that streptomycin and calciferol should be used together from the beginning if this regimen can be afforded.

REPORT OF CASES

Case 1.—S. W. B., a white young woman 21 years old, had had lupus vulgaris for fifteen years. The right side of the face and ear, the lower half of the nose and the anterior part of the neck were involved down to the manubrium sterni. There was considerable scarring, with a few ulcerated sites covered by crusts and small hypertrophic patches mixed with plane areas barely raised above the normal skin. During September 1946, she began treatment with 100,000 units of calciferol daily. Her progress was slow for the first three months, but she showed a great deal of improvement after six months. From then on until May 1947, further improvement was less evident and her lesions seemed to be stationary. There was about 60 per cent improvement. At this time the use of streptomycin was begun and the calciferol therapy continued. One gram of the former was given daily in divided doses at four hour intervals. Healing of the remaining lesions was notable after two weeks. The patient remained on this regimen for two months, when healing seemed to be complete. Only pigmented scars were apparent. Previously hypertrophic sites were leveled, and the scars were neither corded nor contractile.

Case 2.—J. C. R., a Negro man 38 years old, had had lupus vulgaris for over twenty-five years. There was extensive involvement of the face, left ear, neck, shoulders, back, right side of the thorax and right forearm. The patches for the most part were flat, but there was a fungating lesion on the neck plus some keloid formation with contractile scarring. He began the use of calciferol in July 1946, with 100,000 units daily. After nine months there was great improvement and his lesions were estimated to be 70 per cent improved. In

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From the Department of Dermatology, University of Illinois College of Medicine and the Cook County Hospital.

[1] (*a*) Villaret, M.; Justin-Besançon, L., and Fauvert, R.: Actinothérapie indirecte de la tuberculose, Presse méd. **34**: 753 (June 16) 1926. (*b*) Levaditi, C., and Li, Y. P.: Étude expérimentale de l'ergostérol irradié, ibid. **38**: 168 (Feb. 5) 1930.

[2] Charpy, M. J.: Technique de traitement du lupus tuberculeux, Ann. de dermat. et syph. **3**: 331 (Nov.-Dec.) 1943.

[3] Dowling, G. G., and Thomas, E. W. P.: Treatment of Lupus Vulgaris with Calciferol, Brit. J. Dermat. **58**: 45 (March-April) 1946.

[4] Feldman, W. H., and Hinshaw, H. C.: Effects of Streptomycin on Experimental Tuberculosis in Guinea Pigs: Preliminary Report, Proc. Staff Meet., Mayo Clin. **19**: 593 (Dec. 27) 1944.

[5] O'Leary, P. A.; Ceder, E. J.; Hinshaw, H. C., and Feldman, W. H.: Treatment of Various Types of Cutaneous Tuberculosis with Promizole and Streptomycin: A Preliminary Report, Arch. Dermat. & Syph. **56**: 222 (Sept.) 1947.

[6] (*a*) Smith, M. I., and McClosky, W. T.: The Chemotherapeutic Action of Streptomycin and Promin in Experimental Tuberculosis, Pub. Health Rep. **60**: 1129 (Sept. 28) 1945. (*b*) Smith, M. I.; McClosky, W. T.; Jackson, E. L., and Bauer, H.: Chemotherapeutic Action of Streptomycin and of Streptomycin with a Solfone or Sulfadiazine on Tuberculosis, Proc. Soc. Exper. Biol. & Med. **64**: 261 (Feb.) 1947.

April 1947, the use of streptomycin was begun, together with calciferol. One gram of the antibiotic was given daily intramuscularly, in divided doses every four hours. This combined treatment was continued for seven weeks, when it appeared that all the lesions were clear. Only pigmented scars remained. The scars were unusually smooth and free of contractures. After the first week of treatment, the patient complained of vertigo and nausea and vomited three times. Nevertheless, the therapy was continued, with the consent of an internist and an otolaryngologist.

Case 3.—S. M., a white woman 48 years old, had had lesions a number of years on the parts adjacent to the left elbow, over the sternum and along the right nasolabial fold. They were typical of lupus vulgaris which had undergone considerable scarring, though numerous apple jelly nodules could be demonstrated. In April 1946, she began treatment with calciferol, 100,000 units daily. After two months, the dose was increased to 150,000 and continued for six months, making eight months in all for this form of therapy. There was about 50 per cent improvement. There seemed to be little progress at this time. It was then that streptomycin therapy was begun and used in conjunction with the calciferol. The antibiotic was given intramuscularly in doses of 1 Gm. a day at intervals of four hours. After nine weeks of this combined treatment, all the lesions appeared to be inactive. Only pigmented scars remained, and no nodules were apparent.

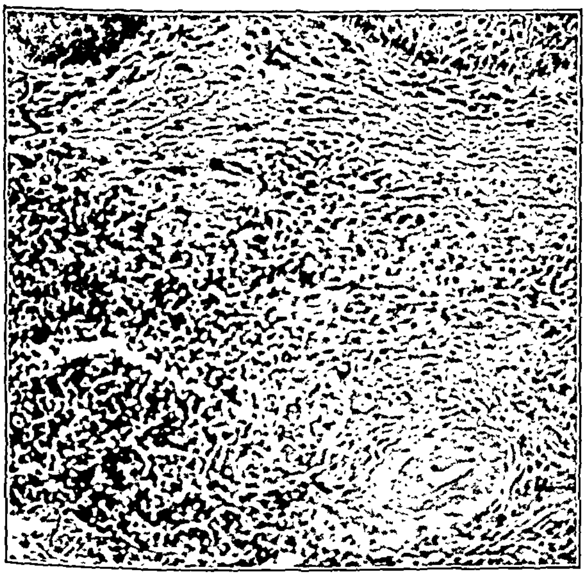

Fig. 1 (case 4).—Low power photomicrograph of section.

Case 4.—F. G., a 60 year old white woman, had had changes of the skin of the right side of the face, nose, upper lip and both ears, which began to appear at the age of 15 years. There was pronounced ectropion of the right lower eyelid. There had been surgical treatment of the lesions on two occasions, the first time many years previously, to remove an ulcer that had formed. Later, a tumor was removed, but this was said not to be malignant. In November 1946, calciferol therapy was begun with 150,000 units daily. After two months the dose was reduced to 100,000 units, which was tolerated better. In July 1947, after seven months, there was about 20 per cent improvement and it was decided to add the use of streptomycin. One gram was given intramuscularly daily at intervals of four hours. The combined streptomycin and calciferol therapy was continued for seven weeks, when the patient had to leave the hospital. It was estimated that her lesions were about 90 per cent healed. A biopsy was made of site which appeared to be almost entirely well. Dr. M. R. Caro studied the sections from this and found that the "histologic examination showed a flattened epidermis. In the upper part of the corium the connective tissue was edematous, the blood vessels were dilated and there was a diffuse infiltrate of lymphocytes, plasma cells and connective tissue cells. Throughout the rest of the corium there were many circumscribed granulomas composed largely of lymphocytes and epithelioid cells, with a few plasma cells and connective tissue cells, an occasional eosinophil and a few giant cells. Several of these granulomas were about blood vessels the walls of which were thickened to the point of occlusion of the lumen. Smaller blood vessels were dilated, and there were several areas of erythrocytes lying free in the tissues. The Weigert stain showed a few strands of elastic fibers just beneath the epidermis, but these fibers were almost entirely absent from the rest of the corium. The Ziehl-Neelsen stain *failed to show any acid-fast bacilli.*"

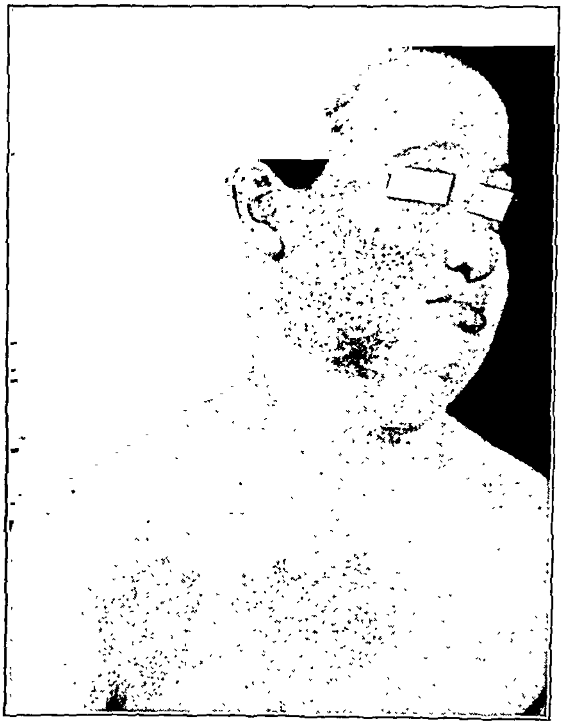

Fig. 2 (case 5).—The photograph shows clinical healing with pigmentation and scarring.

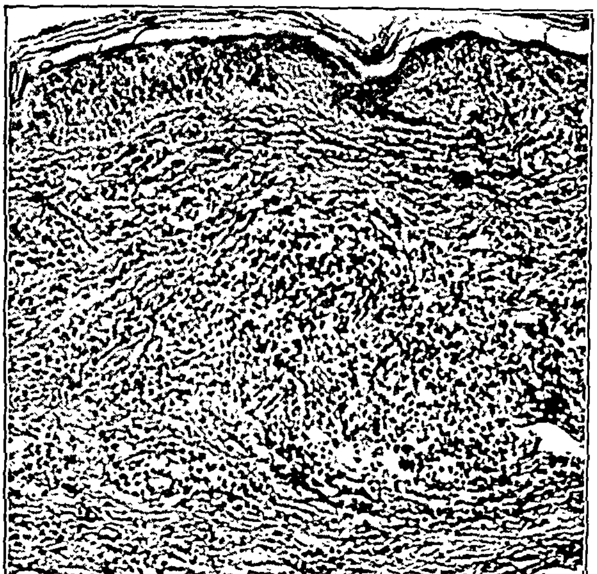

Fig. 3 (case 5).—Low power photomicrograph of section.

CASE 5.—A. D., a young white woman 23 years old, who was mentally deficient, had had an eruption on the skin since childhood. Patches of lupus vulgaris were present on the cheeks and left ear, about the nose and on the neck, chest and back. There were typical apple jelly nodules at all the affected sites, and the latter were edematous and abruptly raised above the surface of the skin. In September 1946, the use of calciferol was begun in doses of 100,000 units daily, and this was continued until September 1947. At that time there was about 70 per cent improvement when streptomycin was added. The streptomycin was given in daily doses of 1 Gm. at four hour intervals. Combined streptomycin and calciferol were used for six weeks, when all the lesions appeared to be inactive pigmented level scars. Tissue was taken from an area which appeared entirely well. Dr. M. R. Caro studied the sections from this and found that the "histologic examination showed the epidermis to be flat and atrophic. In several places there was edema of the basal layer to the point of liquefaction degeneration. There was dense fibrosis in the upper part of the corium, with dilatation of the superficial blood vessels and a diffuse infiltrate composed largely of lymphocytes, histiocytes and connective tissue cells and a few chromatophores and plasma cells. There was considerable edema in the infiltrated zone, and there were several foci of free hemorrhage into the tissues. There were narrow mantles of infiltrate about the deeper vessels. The Weigert stain showed the elastic fibers to be missing from the infiltrated areas but normal in the rest of the corium. The Ziehl-Neelsen stain failed to show any acid-fast bacilli."

COMMENT

These patients represent that considerable group with lupus vulgaris that does not attain a complete cure with calciferol alone. Most investigators have found that maximum benefits from this vitamin are obtained within nine months, though some feel that they have seen only minor improvements after five months. At any rate, it is common for some residual activity to remain in the patches of lupus vulgaris. Other forms of tuberculosis of the skin respond even more slowly. Scrofuloderma is one of them. If one includes some forms of sarcoidosis among the Koch infections, the period before maximum improvement becomes evident is much more prolonged.

The experience with calciferol therapy in the cutaneous tuberculoses is still too short to say that the improvements from it will be permanent. One must keep in mind, however, that the diseases for which lupus vulgaris is the prototype are noted for extremely slow evolution. It will take considerable time to pass final judgment as to the permanent efficacy of this new form of treatment.

Therapeutics has numbers of examples in which a disease is amenable to some form of treatment short of cure. As in syphilis, it is better not to let any particular therapeutic program of lupus vulgaris gel before many other modifications are tried in an attempt to discover optimum uses and methods. Perhaps it would be better to try calciferol intensively in short periods with sufficient rest intervals. On the other hand, it may be that smaller doses for prolonged periods might be better.

These questions must be left to the future and to the ingenuity of the clinical investigator. It would be helpful in the pursuit of these various exploratory lines if one knew the mechanism by which calciferol effects its benefits. As yet, this is not known. Of course, it is thought that calcium metabolism and mobilization are in some way concerned. Our investigations in this direction have not helped to substantiate this hypothesis. Certainly, clinical results do not parallel blood levels of calcium. We have noted that, in a few patients who obtained more spectacular degrees of improvement, there were initial toxic reactions. Do these latter represent a kind of paradoxic effect or variety of Herxheimer reaction? On the other hand, they may represent reactions of impurities contained in the calciferol, such as toxisterol. If so, it might be worth while to try toxisterol itself, cautiously. Charpy[7] has stated the belief that a certain amount of calciferol increases the activity of intestinal phosphatases and that with stronger doses there occur, moreover, activation of other phosphatases in the kidneys and in the bones, which produce intoxication. He expressed the belief that calciferol reacts on the lupus not by itself but through products of the hydrolysis of the intestinal phosphatase transferred to skin by means of the circulation.

In the use of a drug as potent as calciferol, it is needless to say that proper precautions must be exercised to prevent unnecessary untoward reactions. The calcium and phosphorus blood levels should be watched. Intolerance of calciferol does occur, and cognizance of it must be taken. We have observed that a rest period may permit resumption of the drug. The dose at this time should be reduced considerably and not raised hastily. Some patients seem to improve satisfactorily with smaller quantities of calciferol. One should watch for evidence of metastatic calcium deposits, as in the kidneys. A few well documented and proved cases with such unhappy changes have been reported with doses of vitamin D within the treatment schedules that our patients used. These aberrant subjects must, it seems to us, represent highly exceptional patients, to be found among any group receiving any form of treatment, however innocuous we may think such therapy. It would seem, however, that in so baleful a disease as lupus vulgaris, the small risk, as represented by the meager group with untoward results, is worth while taking, in view of the general good to the large number.

Streptomycin, like other drugs and antibiotics, is not without dangers. These ill effects, such as to the ears, have become familiar to physicians. These must be anticipated in the patient and nipped as early as possible, before much damage occurs or irreversible changes take place. Fortunately, our observations with the combined calciferol and streptomycin program show that large doses of the latter are not required. These smaller amounts of antibiotics are far less apt to produce accidents, though a few will still occur.

When treatment with streptomycin is continued over a prolonged period, resistance to this drug tends to develop. It is hoped that the combination of streptomycin with calciferol will shorten the time for improvement or cure and forestall the development of such resistance. The excellent results obtained in this small series of cases of lupus vulgaris were made possible perhaps by the brief interval during which the antibiotic needed to be used. It may be that calciferol sensitized the tubercle bacilli to the action of streptomycin. There is considerable question as to whether the improvement our patients have shown will be permanent. Lupus vulgaris is notorious for its recrudescence in apparently healed areas. Moreover, histologic examination of the skin casts further doubt on hopes for complete cure, although no tubercle organisms were found in the tissue.

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7. Vitamin D_2 in the Treatment of Lupus Vulgaris, Foreign Letters, J. A. M. A. **135**: 528 (Oct. 25) 1947.

This report has suggested that the combination of the two drugs was of benefit in lupus vulgaris and it was emphasized that optimum effects must be sought through investigations of the dosage, the intervals of use and other variables. It would seem evident in one of these trials that streptomycin should be begun simultaneously with calciferol long before the improvement from the latter is at its crest. Some of our patients will receive this and other subjects still other variations. It would seem that in some patients there could be local injections or topical applications. It is possible that some form or combination of therapy, such as was used in these patients, may be of value in other forms of tuberculosis.

SUMMARY

The cases of 5 patients with lupus vulgaris are reported, in whom combined treatment with calciferol and streptomycin was used. Calciferol alone was employed until it ceased to be of benefit. This period lasted from five months to a year. Streptomycin was then used in combination with the calciferol until the lesions appeared to be inactive. This required from six to nine weeks. One patient terminated her treatment before she had fully recovered, though her lesions were almost entirely inactive.

The combined attack by these two drugs was so effective as to suggest that they are synergists. It is suggested that the brief period required for the use of streptomycin in the present group of patients forestalled the development of resistance, which otherwise tends to occur in tubercle organisms as a response to this antibiotic with longer regimens.

ADDENDUM

One patient (case 4) continued to improve spontaneously in the months after leaving the hospital. She was seen at intervals, but received no further treatment. All activity in the lesions appeared to be entirely gone, leaving thin pliable atrophic scars.

Two more patients with lupus vulgaris have been treated with combined calciferol and streptomycin. One subject, a white woman 66 years old, with lesions on the forehead and scalp, unlike the patients reported, was given 1 Gm. of streptomycin daily from the beginning of her treatment with calciferol (100,000 units daily) for a period of seven weeks. All her lesions regressed rapidly, leaving pigmented and mottled scars. She had been observed for over two months since leaving the hospital, but she had had no further treatment. The scars had become thinner and as of the date of writing, were thin, atrophic and supple. There appeared to be complete cure.

The second patient under observation since the completion of this paper was a Negro man, 48 years old, with lesions on the face, neck, trunk and left forearm. His treatment was started with streptomycin and calciferol simultaneously and was given for eight weeks. Drug dosages were the same as for the previous patient. All his lesions cleared rapidly, so that when he left the hospital there appeared to be no activity in them. In the six weeks after, he had no therapy. The resulting scars became thinner and lost much of their pigment. In this group of patients, a striking feature, besides the rapid and uneventful healing of the lesions, has been the thin even atrophic character of the scars, which are relatively inconspicuous.

Clinical Notes, Suggestions and New Instruments

EXTENSIVE VISCERAL DIVERTICULOSIS

DAVID FISKE, M.D.
and
LEONARD M. ASHER, M.D.
Los Angeles

Although diverticulosis involving a hollow viscus is not an uncommon medical observation, the existence of multiple diverticula of numerous viscera is infrequent. Review of the literature reveals no report of extensive diverticulosis involving several hollow organs.[1] For this reason, it is felt that the following case report is of interest

REPORT OF A CASE

The patient, W. B. M., was a 52 year old white man who first entered the hospital Dec. 14, 1940, with a complaint of chronic bladder trouble for many years. For several years prior to his admission he had had recurrent pain and burning on urination and was able to void only small amounts of urine with great effort and straining. The patient denied ever having had gonorrhea. Cystoscopy performed four days after admission disclosed the wide orifice of a diverticulum, above and to the left of the trigone. The bladder neck was thickened, but there was no evidence of trabeculation. Two weeks after admission, cystotomy was done and a large bladder diverticulum was resected.

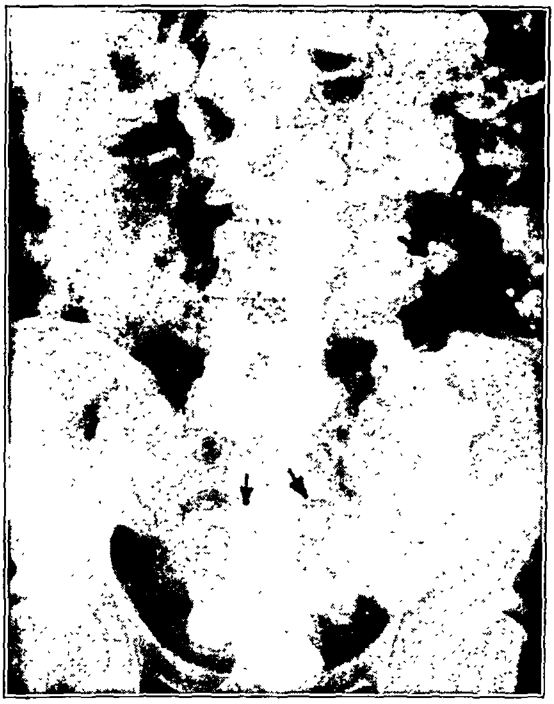

Fig. 1.—Arrows indicate small bowel diverticula.

The patient again entered this hospital June 18, 1942, with fecal impaction, and was discharged June 24, six days after

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From the Department of Medicine, Wadsworth General Hospital, Veterans Administration Center, Los Angeles.

Published with the permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed nor conclusions drawn by the authors.

[1] Ravdin, I. S., and Hodes, P. J.: Retroperitoneal (Mesenteric Pouch) Hernia, Ann. Surg. **123**: 106 (Jan.) 1946. Cave, H., and Alsop, W. E.: Diverticulitis of the Colon, S. Clin. North America **26**: 390 (April) 1946. Clark, B. O.: Congenital Polycystic Liver and Kidneys: Renal Calculi; Multiple Diverticulosis, M. Bull. Vet. Admin. **20**: 333 (Jan.) 1944. Bockus, H. L.: Gastroenterology, Philadelphia, W. B. Saunders Company, 1944, vol. 2, p. 107. Hatchette, S.: Multiple Diverticula of the Jejunum, Duodenum and Colon, Radiology **34**: 577 (May) 1940.

entry, the only significant observation on this admission being diastasis recti and a large ventral hernia.

On April 2, 1945, the patient again entered the hospital. His complaints on this admission were bloating, vomiting, belching, epigastric pain of a vague nature and alternating diarrhea and constipation of two to three years' duration. Roentgenograms of the upper part of the gastrointestinal tract showed extrinsic pressure leading to incomplete obstruction of the small bowel. An exploratory laparotomy was done on April 30. The patient was operated on April 30. The surgical report read: There was a diastasis of the recti muscles and a large ventral hernia in the midline. . . . There were many diverticula, some the size of a lemon, scattered through the jejunum and proximal ileum for a distance of about 5 feet (12.7 cm.) along the mesenteric border (fig. 1). The diverticula were extremely thin walled and could be easily emptied. Numerous scars over the diverticula showed evidence of fibrosis following previous inflammation. The hernia was repaired, but no bowel resection was done because of the extent of the lesions. The patient was discharged May 17.

On his fourth admission, Oct. 22, 1946, the patient was treated for chronic cystitis; he was discharged November 20. At that time the patient was observed to have a small left inguinal hernia.

The patient was rehospitalized July 24, 1947. He had been working in his yard on the day of admission, without the truss that he generally wore, and his inguinal hernia descended. He could not replace it and soon severe cramps and nausea developed, but no vomiting. In the hospital the hernia was readily reduced.

Because of the patient's gastrointestinal complaints, a series of roentgenograms of the upper part of the gastrointestinal tract was taken July 25, which showed a filling type defect of the pyloric antrum. At that time it was also noted that the patient had diverticulosis of the small intestine and a gastric diverticulum (fig. 2). To rule out a malignant condition, gastroscopy was attempted on August 8. However, resistance was encountered at the cardia and it was felt that the instrument was in a diverticulum, so that the examination was abandoned. Another series on August 20 showed diverticula of the duodenum (fig. 3), diverticulosis of the small intestine and indeterminate diverticula along the lesser curvature of the pars media of the stomach. Several roentgenograms with barium sulfate enemas revealed no abnormalities. A cystoscopic examination was performed on September 18, which showed a small prostatic urethral diverticulum just to the right of the verumontanum.

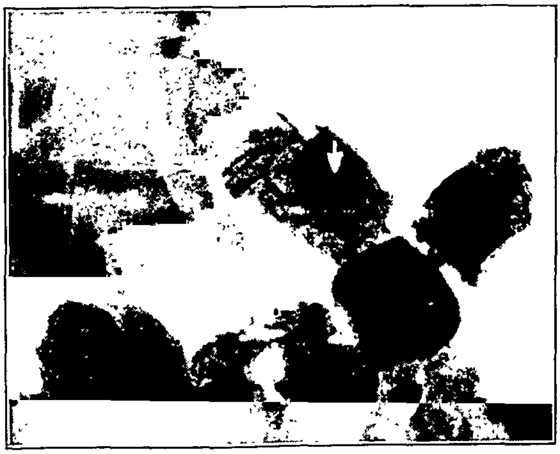

Fig. 2.—Arrow indicates gastric diverticulum.

It was felt that the patient was not a good candidate for herniorrhaphy because of his poor condition, and particularly because of his apparent muscular weakness, and he was discharged September 15 on a medical regimen.

COMMENT

Diverticula of the gastrointestinal tract are classified as true or false, depending on whether or not they are clothed in muscularis. It is generally recognized that true diverticula, of which the classic example is Meckel's diverticulum, are congenital in origin.[2] The causation of false diverticula is more controversial. Many factors have been indicted. These include: fecal impaction, fermentation and gas formation, venous stasis, degenerative and inflammatory processes, old age and constipation. Also mentioned are: frequent purgation, poor nutrition, disturbances of sympathetic innervation and an inherent muscular weakness, particularly around the points of entrance of blood vessels where it is found that the muscularis is sparsely distributed.[3]

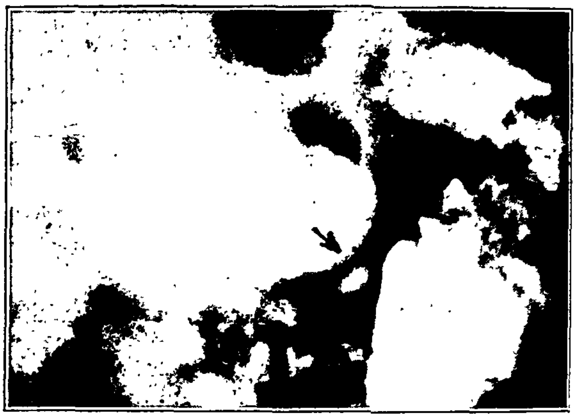

Fig. 3.—Arrow indicates duodenal diverticulum.

The theories most frequently cited are those of Klebs, Edel, Hausemann and Edwards, who favored the idea of herniation along the paths of blood vessels[4]; of Fraser, who explained diverticula on increased intestinal pressure,[4] and of Hartwell and Cecil, who stated that inherent muscular weakness is the cause of diverticula formation.[3b] Difficult for Klebs and his proponents to explain are the observations of Erdman and others that diverticula are often found along the antimesenteric border of the intestine.[5]

Probably, as is so often the case, the truth is not at any of the extremes postulated, but rather is a compromise between several or all of the theories mentioned. For example, increased intestinal pressure, when directed at a weakened musculature, such as occurs along the courses of blood vessels or at weakened interstices of the intestinal muscular strands (locus minoris resistentiae), in a person suffering from emaciation or in an elderly person with widespread senile degenerative processes, could conceivably result in an intestinal diverticulum. Fecal impaction could contribute its share to increasing intestinal pressure. In any particular person, one or another of these factors could be of major importance. As regards "inherent muscular weakness," a study of the coincidence of diverticula and the myopathies might be of interest.

Diverticula have been seen along the entire length of the gastrointestinal tract, but with a decided difference in incidence. They occur occasionally in the esophagus, stomach, jejunum and ileum and more commonly in the duodenum and colon.[6] The sigmoid and descending colon show an incidence greater than that of the rest of the gastrointestinal tract combined,[1c] varying from 0.8 to 1 per cent of cadavers.[2] Diverticula in the stomach have been reported in only 150 cases prior to July 1946. In the small intestine, excluding the not uncommon true congenital Meckel's diverticulum (incidence of 2 per cent),[7] diverticula are comparatively rare.[8] Edwards reported 9 cases of jejunal diverticula in 2,820 autopsies, an incidence of 0.31 per cent.[9] At the Mayo Clinic, until 1932, only 52 cases of small bowel diverticula were found, of which 39 were in the jejunum.[4] Until 1945, less than 100 cases of jejunal diverticula were reported in the literature.[4] Diverticula of the gastrointestinal tract were reported by Martin and Adsit [5] as occurring 33 per cent oftener in female patients than in male, and reported by Mora [2c] as being twice as frequent in male as in female patients. The most frequent age incidence was between 50 and 70 years.[2c] It is interesting to note that Larimore reported the common colonic diverticula as rare in Negroes.[3b] Diverticulosis is seldom suspected clinically; most cases of the disorder are discovered accidentally during routine studies, as occurred in the case presented. No reports have been seen concerning the coincidence of gastrointestinal diverticula with bladder or urethral diverticula or with multiple hernias.

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[2] (*a*) Walters, W.: Gastric Diverticulum, J. A. M. A. **131:** 954 (July 20) 1946. (*b*) Jackman, R. J., and Buie, L. A.: Diverticula of Colon, ibid. **121:** 1144 (April 3) 1943. (*c*) Mora, J. M.: Diverticulitis, S. Clin. North America **24:** 175 (Feb.) 1944. (*d*) Badia, P. D: Diverticulosis and Diverticulitis of Colon, Am. J. Surg. **67:** 536 (March) 1945.

[3] (*a*) Mora.[2c] (*b*) Galambos, A., and Galambos, W. M.: Diverticulosis and Diverticulitis of Colon, Rev. Gastroenterol. **13:** 171 (May-June) 1946.

[4] Cited by Galambos and Galambos[3b] and by Shutkin, M. W.: Diverticulitis of the Jejunum with Perforation, Gastroenterology **5:** 102 (Aug.) 1945.

[5] (*a*) Galambos and Galambos.[3b] (*b*) Shutkin.[4]

[6] Martin, K. A., and Adsit, C. G.: Diverticulosis and Diverticulitis: A Clinical Study of Complications, M. Clin. North America **29:** 639 (May) 1945.

[7] Mottram, M. E., and Garland, L. H.: Meckel's Diverticulum, Am. J. Roentgenol. **53:** 142 (March) 1945.

This is an unusual instance of multiple diverticula involving stomach, small intestine and urinary bladder. The diverticula both in the intestine and bladder became foci of recurrent infection. This resulted in incomplete small bowel obstruction, on at least one occasion, and recurring bouts of cystitis. Strangely enough, in this case, there were no diverticula in the colon, the usual site of this condition.

Associated with the diverticula, there was development of ventral and inguinal hernias. The combination of these two disorders strongly suggests the existence in this patient of an inherent defect in the structure of both smooth and striated muscle. Unfortunately, no biopsies are reported which might further elucidate this syndrome.

SUMMARY

A case is reported of multiple diverticulosis involving stomach, duodenum, jejunum, ileum, bladder and urethra, without diverticulosis of the colon. Associated with the diverticulosis of the hollow viscera, there existed multiple abdominal wall hernias. It is felt that this is a clinical entity based on a weakness of both smooth and striated muscle structure. The literature is reviewed.

Council on Foods and Nutrition

ACCEPTED FOODS

The Council on Foods and Nutrition has voted to accept the following food products as conforming to the rules of the Council for special purpose foods and for fruit juice.

James R. Wilson, M.D., *Secretary.*

The Borden Company, New York, N. Y.

Gerilac—Powdered Modified Milk for Special Dietary Uses, consists of a mixture of whole milk, skim milk, dried brewers' yeast fortified with riboflavin concentrate, vitamins A and D concentrate from fish liver oil with added irradiated ergosterol, ascorbic acid, nicotinamide, monosodium phosphate, iron and ammonium citrate.

Analysis (submitted by manufacturer).—Water 2.5%, milk fat 10.0%, milk proteins 33.0%, milk sugar (lactose) 47.0% and minerals 7.5%.

Vitamins and Minerals	Per Hundred Grams
Vitamin A	7,927.00 U.S.P. units
Thiamine	2.70 mg.
Riboflavin	3.30 mg.
Nicotinamide	22.00 mg.
Ascorbic acid	104.00 mg.
Vitamin D	854.00 U.S.P. units
Calcium (Ca)	1,012.00 mg.
Phosphorus (P)	975.00 mg.
Iron (Fe)	19.00 mg.

Calories.—4.10 per gram; 116 per ounce.

Use.—A fortified milk product for use in persons of advanced years.

Charles Killgore Company, Inc., Yonkers, N. Y.

Dietician Brand Diet-Mix consists of government standard patent flour, soy flour, gluten flour, vegetable shortening, leavening, salt, dicalcium phosphate and soluble saccharin. The product is enriched to approximately whole grain levels with sodium iron pyrophosphate, thiamine, riboflavin and niacin. Vitamin D is added.

Analysis (submitted by manufacturer).—Protein 30.0%, fat 9.2%, available carbohydrates 36.0%, iron 0.81 mg. per ounce and calcium 31.2 mg. per ounce.

Calories.—99 per ounce; 3.49 per gram.

Use.—For carbohydrate-restricted diets.

Charles Killgore Company, Inc., Yonkers, N. Y.

Dietician Brand Gluten Spaghetti Curls consists of gluten and semolina flours.

Analysis (submitted by manufacturer).—Protein (N × 5.7) 36.0 per cent, fat 1.0 per cent, available carbohydrates 40.0 per cent, H_2O 10.0 per cent.

Calories.—93 per ounce; 3.3 per gram.

Use.—For carbohydrate-restricted diets.

American Fruit Growers, Inc., Los Angeles.

Blue Goose Brand Orange Juice. This product consists of California Valencia orange juice (A. F. G. grade A).

Use.—For use as a wholesome beverage and wherever orange juice is intended to provide or supplement the intake of vitamin C in the normal or special diet.

Vitamin C Content.—Evidence has been submitted to the Council indicating that the company is capable of producing with a high degree of regularity an orange juice which contains, immediately after canning, 40.0 mg. or more of ascorbic acid per hundred cubic centimeters of juice. This meets the standard established by the Council.

Average Caloric Value.—15 calories per ounce.

Council on Physical Medicine

REPORT OF THE COUNCIL

The Council on Physical Medicine has authorized the following report for publication on the recommendation of its Consultants on Contraceptive Devices. The Council wishes to express its appreciation for the valuable assistance rendered in the preparation of this report to its consultants: Drs. Walter W. Greulich, Andrew C. Ivy (Chairman), Walter J. Meek and Pendleton Tompkins.

Howard A. Carter, *Secretary.*

REQUIREMENTS FOR ACCEPTABILITY OF CONTRACEPTIVE DEVICES

The following requirements for the acceptability of contraceptive devices of a physical nature, such as diaphragms and caps, stems and rings, tampons and sponges, devices for insertion, condoms and sheaths, have been proposed by the Consultants on Contraceptive Devices of the Council on Physical Medicine. These have been adopted by the Council, but it should be emphasized that they may be changed from time to time as the evidence indicates.

I. *Acceptable Evidence:*

A. Medical evidence to be acceptable must have been collected by physicians with special experience in the field of contraception or obstetrics and gynecology.

B. Evidence regarding the physical and chemical characteristics of the device must have been collected by individuals competent in the field.

II. *Efficacy:*

The device shall meet the following test of effectiveness: Each patient shall be observed for a minimum of twelve months. The minimum patient-years' experience shall be seventy-five years. This may be obtained by observing 75 patients for one year, 50 patients for eighteen months or preferably 38 patients for two years or 25 patients for three years. Only patients pronounced as presumably fertile shall be used. If patients are excluded from the series on the basis of their being irregular users, the number excluded and the nature of the evidence justifying their exclusion shall be provided. The device shall provide a degree of protection as great as is consistent with good practice concerning the article under consideration, the protection to be obtained in women who have been compared with others habitually practicing no contraception.

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[8] d'Abreu: An Unusual Case of Diverticulum of the Small Intestine, Brit. J. Surg. **31**: 408 (April) 1944.

[9] Devegney, F. E., and Bailey, H.: Diverticulum of the Jejunum, Brit. M. J. **2**: 98 (July 25) 1942.

III. *Harmlessness:*

A. Evidence shall be submitted showing that 100 or more couples have used the device on six or more occasions without subjective injury or sensations of pain, distress or discomfort. The refusal rate and the cause thereof shall be provided for this group of 100 patients and for the group of patients used for obtaining seventy-five or more patient-years of experience.

B. Evidence shall be submitted showing that 20 or more patients inserted, used and removed the device on each of twenty-one successive days without irritation or injury or evidence of physical damage as disclosed by examination with a speculum. This evidence is to be supplied in addition to similar evidence obtained on the group of patients used to establish efficacy in seventy-five patient-years of experience.

C. Where the device is a brand of a type previously known to or accepted by the Council on Physical Medicine, such as contraceptive diaphragms of standard design or condoms, the evidence required by the two preceding paragraphs may be waived.

IV. *Design:*

A. The design of the device and accessories shall be satisfactory to the Council.

B. If a syringe applicator or nozzle is furnished for use in connection with a jelly or cream, it shall be sufficiently translucent to permit the detection of air which might lead to inadequate dosage.

V. *Durability:*

A. Condoms must have a shelf life of at least one year, and the date of expiration shall be stamped on the package so as to be readily seen by the purchaser. The shelf life test shall be conducted at a temperature of 37 C. and a humidity of from 10 to 30 per cent. At the end of the test or the expiration date stamped on the package, the condom shall not permit the passage of water during a period of ten minutes when filled with water so that the height of the water column in the condom shall be 15 cm. (6 inches).

B. The package containing a diaphragm shall be stamped with the date of manufacture. The instructions packed with the diaphragm shall show the date of manufacture, and the instructions shall provide the life expectancy on the basis of evidence submitted to the Council regarding the shelf life and the use life in combination, and when used with a known and acceptable jelly or cream. At the end of the life expectancy claimed, the diaphragm shall not permit the passage of water or a methylene blue solution under a pressure of 26 mm. of mercury (½ lb. per sq. in.), the test being conducted so as to detect leaks about the rim.

VI. *Directions to Users and Advertising:*

A. The directions shall include a warning that the user should not expose the device to agents such as ordinary oils and greases or hot water, which will damage the device. Evidence shall be submitted showing the ordinarily available agents which damage and do not damage the device.

B. The directions shall include the appropriate means for cleansing the device.

C. The directions packed with each device whose performance depends on an intact membrane shall direct the user to inspect the device for holes and tears and to discard it if one is found.

D. The advertising and directions of the manufacturer shall make it clear that contraceptive diaphragms (and caps), tampons and sponges are intended for use in conjunction with spermicidal jelly or cream and should direct attention only to those accepted by the Council on Pharmacy and Chemistry.

E. The advertising and directions must not state or imply that the appropriate diaphragm or cap, or other device, can be chosen without the aid of a physician.

F. The advertising and directions and other printed matter packed with the device shall be satisfactory to the Council.

REPORTS OF THE COUNCIL

The Council on Physical Medicine has authorized publication of the following reports. Howard A. Carter, *Secretary.*

NATIONAL HEARING AID, MODEL D (DUPLEX) ACCEPTABLE

Manufacturer: National Hearing Aid Laboratories; 815 S. Hill Street, Los Angeles 14.

The Duplex model of the National Hearing Aid is a metal-cased instrument with a separate leather-cased battery compartment connected to the hearing aid case by a cloth-covered cord with plugs at both ends. A crystal receiver is connected to the case with a plastic-covered cord. Neither cord is reversible. Two wheel type controls at the top of the case provide (1) a volume control and (2) an on-off 3 position tone control. The wearing clips are permanently attached to the front side of the case.

The instrument, including batteries, weighs 348 Gm. (12¼ ounces) and measures 69 by 65 by 28 mm. (2¾ by 2½ by 1⅛ inches). One 1.5 volt zinc-carbon type of cell is required for the A battery; the B battery must give 30 volts. The power consumption was measured in a laboratory acceptable to the Council and was found to be 39 milliamperes at 1.4 volts for the A battery. For the B battery at 28.5 volts it was 0.99 milliampere when quiet and 0.54 milliampere in the presence of sound.

Table 1.—*Frequencies*

Tone	250	500	1,000	1,200	2,200	3,000	4,000
1	33	43	55	54	38	39	45
2	27	36	46	44	27	30	33
3	27	36	46	44	23	30	23

Table 2.—*Approximate Values of Maximum Sound Pressure Levels*

Frequency	Input Level	Maximum Output Level
500	85	131
1,000	90	137
2,000	90	125

Table 1 lists typical results obtained for seven different frequencies at three settings of the tone control, with the volume control set for full gain.

Table 2 gives approximate values of maximum sound pressure levels (at three frequencies) set up in the 2 cc. coupler with the volume set for full gain and tone control set at position 1.

The Council on Physical Medicine voted to include the National Hearing Aid Model D (Duplex) in its list of accepted devices.

CONTINENTALAIR ICELESS OXYGEN TENT, MODEL NO. 3000, ACCEPTABLE

Manufacturer: Continental Hospital Service, Inc., 18636 Detroit Avenue, Cleveland 7.

In the February 21 issue of The Journal, page 555, there was announced the acceptance of the Continentalair Iceless Oxygen Tent with Automatic Temperature Control. The type of apparatus there referred to is now known as Model 2000, and has been followed by a modification to be known as Model 3000. The latter is the subject of the present report.

It employs the same "freon" refrigerant as the previous model, and the changes have been made primarily for greater physical convenience. It has a smaller and more compact cabinet and a housed compressor. An oxygen regulator holder has been added for the convenient storage of regulators that are not in use at the moment, and new handles and extra large casters have been provided.

The total weight of the new model is 96 Kg. (211 pounds); the shipping weight is 146 Kg. (323 pounds). The dimensions are 102 by 56 by 44 cm. (40 by 22 by 17½ inches). Accessories include one permanent type canopy or three Visionaire disposable type canopies, one canopy holder, one regulator and one air director. The motor requires a 110 volt alternating current supply, and draws 528 watts (4.8 amperes).

In actual use it was found that the tent will operate at a concentration of 50 per cent oxygen, provided (1) that a flow of 15 liters per minute be maintained for twenty minutes, (2) that a basic flow of 10 liters per minute be maintained and (3) that the motor be turned off when the patient is examined or given food, and the motor turned on after the tent has been closed following these procedures. Under these circumstances there is adequate provision of oxygen and adequate elimination of carbon dioxide.

The Council on Physical Medicine voted to include the Continentalair Iceless Oxygen Tent, Model No. 3000, in its list of accepted devices.

GENERAL ELECTRIC GERMICIDAL LAMP ACCEPTABLE

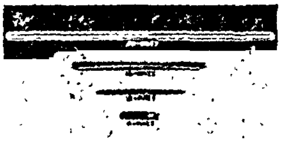
Manufacturer: General Electric Company, Lamp Department, Nela Park, Cleveland 12.

The General Electric Germicidal Lamp is an ultraviolet source for disinfecting purposes. It is used in a fixture which is designed to screen the eyes and the skin of the occupants of an inclosure from its direct radiation. The total amount of direct and scattered ultraviolet radiation incident on the occupants must be kept below the level that will produce conjunctivitis, erythema and any other unforeseen injurious physiologic effects that may arise from prolonged exposure. Hence, the ultraviolet energy for the most part is directed horizontally across the upper portion of the inclosure (room), roughly within the limits between the ceiling and the head of a tall person in standing position. The Council on Physical Medicine agrees that, by using a sufficient number of lamps, approximately 95 per cent of the organisms which are within the lethal area of radiation are killed.

However, the restriction imposed by the aforementioned dangers of personal injury prevents effective ultraviolet irradiation of the principal areas in the lower part of the room in which droplets, expelled from the mouths of occupants, might pass directly from person to person. Outside of this zone of direct droplet infection, however, there is some protection against cross infection for occupants because the air in an interior is continuously circulating and some evidence is available to show that this process dilutes the germ concentration.

The Council accepts ultraviolet lamps for disinfecting air in hospitals, nurseries and operating rooms (relatively free from dust) in which the occupants are regimented, as practiced by the present day empirical methods of sanitation.[1]

On the other hand, the Council does not accept ultraviolet lamps for disinfecting air in schools, waiting rooms, industrial plants, barracks, assembly halls, refrigerators or other industrial applications. In the opinion of the Council the available evidence is not sufficient to warrant advertising claims that the ultraviolet radiation will eradicate infection spread by droplets, or prevent absenteeism in schools, factories and office buildings due to infections of the respiratory tract.



G. E. Germicidal Lamp

Other fields of application recommended by the General Electric Company include installations for poultry and dairy husbandry, brewing establishments and the meat packing industry. In the opinion of the Council critical evidence to substantiate the value of the disinfecting lamp in these installations does not appear to be available.

The physical characteristics of the General Electric Germicidal Lamp are as follows: G-E Germicidal Lamps are made in four standard sizes—30 watt, 36 inches; 15 watt, 18 inches; 8 watt, 12⅛ inches, and 4 watt, 5¾ inches.

Technical Description

	G-30 T-8	G-15 T-8	G-8 T-5	G-4 T-4
Rated watts	30	15	8	4
Over-all length *	36″	18″	12⅛″	5¾″
Diameter	1″	1″	⅝″	½″ +
Circuit voltage	See auxiliary	See auxiliary	See auxiliary	110-125
Approximate amperes	.34	.30	.175	.08
Life (hr.) rated (1 hr. or longer operating periods) †	2500 ‡	2500 ‡	2500	2500
Bulb designation (9741 glass)	T-8	T-8	T-5	T-4
Ultraviolet output watts (2537A) § #	7.2	2.9	1.5	.6
Average ultraviolet output watts through life	6.0	2.4	1.2	.5
Maximum intensity perpendicular to lamp # ▲	.008 watts per sq. ft. at 10 feet	.0032 watts per sq. ft. at 10 feet	.0017 watts per sq. ft. at 10 feet	.00075 watts per sq. ft. at 10 feet
Base	Medium bipin	Medium bipin	Miniature bipin	Radio 4-contact
Auxiliary	Same as for 30-w Fluorescent lamp ‖	Same as for 15-w Fluorescent lamp ¶	Same as for 8-w Fluorescent lamp ¶	58G825—60 cy. 58G826—50 cy. Starter FS-5
Standard package quantity	24	24	24	12

* Including standard lampholders.
† Under specified test conditions.
‡ Where lamps are operated continuously (essentially without current interruption), the rated life is 4,000 total burning hours.
§ An Angstrom unit (A) is a length of one ten-millionth of a millimeter or four billionths of an inch. Wave-lengths of radiant energy are measured in terms of Angstrom units.
‖ For circuit voltages 110-125 (50 or 60 cycles), 199-216 (60 cycles), and 220-250 (50 or 60 cycles).
¶ For circuit voltage 110-125 (50 or 60 cycles).
# Average at 100 hours life, initial rating 25% higher.
▲ Multiply by 10,000 for microwatts per cm.^{2} at one meter.
+ Bent tube construction makes lamp approximately one inch in width.

The physical characteristics of the General Electric Germicidal Lamp meet the requirements of the Council for acceptance. This lamp is used by manufacturers of different styles of fixtures, requiring separate and individual consideration.

The Council on Physical Medicine voted to include the General Electric Germicidal Lamp in its list of accepted devices.

D & C DIAPHRAGM ACCEPTABLE

Manufacturer: Diaphragm and Chemical Company, 235 E. Ontario Street, Chicago.

The D & C Diaphragm is a contraceptive device available in sizes from 55 to 95 mm. in gradations of 5 mm. Laboratory tests of the device indicate that it conforms to the requirements announced by the Council in The Journal, Dec. 21, 1946, page 991.

The Council on Physical Medicine voted to include the D & C Diaphragm in its list of accepted devices.

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[1] Acceptance of Ultraviolet Lamps for Disinfecting Purposes, report of the Council on Physical Therapy, J. A. M. A. **122:** 503 (June 19) 1943.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 18, 1948

HOLISTIC MEDICINE

The growing significance of the holistic or totalistic concept of medical approach to disease has raised problems of importance to physicians generally, but important particularly to authorities responsible for medical education. The average medical graduate finds himself equipped after internship with grounding in the basic sciences of medicine and enough diagnostic acumen to search for and recognize objective disorders of body organs. With the aid of many laboratory devices he can establish a diagnosis and prescribe treatment for obviously pathologic conditions. Beyond this, methods of establishing a single diagnosis may meet with failure in the face of many seemingly unrelated signs and symptoms. Functional and psychosomatic factors have now been repeatedly demonstrated in most of the disease or predisease conditions affecting man, including diabetes, hypertension, ulcers of the stomach and lesser ills. Physicians recognize that they are not being faced with incipient conditions to control but with end results to patch. The establishment of a single diagnosis, which is often assumed to be the proper effort, followed if possible by prescription of a specific remedy, fails to meet the total problem of the patient. This method may frequently cure the lesion but not the person. Commenting on the relative futility of this accepted approach, Karl Menninger[1] states:

> What shall we call the "disease" represented by a man who has always been frail but has worked very hard to support his widowed mother, did not feel he could afford to get married, buries himself in the details of a complicated job, develops paralyzing headaches, loses time at the office for which pay is deducted from his wages, worries about this so much that he loses sleep and begins vomiting after each meal? Just to make it complicated he has a leukocytosis and an enlarged spleen. Does not such a case defy diagnosis?

Equally pertinent is the question: What is the effective treatment that lies within present biologic or chemical therapeutics?

Disorders of this nature and their treatment are totalistic. Effective treatment requires the establishment of a close personal doctor-patient understanding by physicians who have a concept of the dynamics of total personality. Here is a reversal of emphasis away from specialism and toward rebirth in training and prestige of the general practitioner. General physicians of the future must be visualized as practitioners whose training included a thorough grounding in the psychodynamics of personality and general physiology and who are aware of the effects of social, industrial and political impact, and impact of environment generally, on health. Increased availability of time for study of each patient will be essential to success. In contrast to present trends this visualizes the general physician as the central figure of a coordinated service; in such a situation specialists will function in solving special objective pathologic problems.

Discussing future aspects of medicine from the point of view of the educator, Lester J. Evans[2] has said:

> Medicine is caught on the horns of a dilemma which its own progress has forced upon it. As it becomes more and more precise and scientific, specialization is inevitable. Specialization in turn adds to fragmentation and segmentation in medicine. For the patient, whether well or sick, this means added difficulty in obtaining comprehensive medical care when defined in terms of continuity, quality and completeness of service. No short cut to the integration of specialized knowledge and skills into comprehensive medical care has yet been devised, but until this problem is solved, medicine—and the training for medicine—will be inadequate.

Signs of revamping of medical education toward integration have already appeared in several medical schools, among others the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.[3] However, these have been mostly at late fourth year and intern levels. Pressure of medical school curriculums can be eased to make room for newer training methods by dropping memory studies and details of anatomy related to minor landmarks on bones and the relative merits of methods for stewing arsenic free of the stomach mucosa and the like. Most physicians neither remember nor use such material. Greater emphasis can be shifted to internal medicine, pediatrics and modern dynamic psychiatry.

Among physicians in practice there is need for reorientation toward the newer concepts. Literature and opportunities for postgraduate study are becoming increasingly available.

Medical reorientation such as has been proposed is additionally hampered by attempts to mechanize diagnosis and treatment. Medicine, which has always occupied a place between pure science and philosophic morality, must seek its own proper level for progress. The heavy swing of the pendulum toward the coldly scientific, represented by increased degrees of specialization and fragmentation of the patient-doctor relationship, has reversed itself toward an integrated approach to the sick person as being in a state of mental, moral and physiologic imbalance with his environment.

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[1] Menninger, K.: Changing Concepts of Disease, Ann. Int. Med. **29**: 318-325 (Aug.) 1948.

[2] Evans, L. J.: The Medical Educator of the Future, J. A. Am. M. Coll. **22**: 25-29 (Jan.) 1947.

[3] Carpenter, C. C.: Integration and Organization of the Medical Curriculum, J. A. Am. M. Coll. **22**: 30-37 (Jan.) 1947.

Current Comment

VITAMIN E

The popular press and a few medical periodicals have noted the supposed curative powers of vitamin E in various forms of heart disease. The evidence thus far submitted, most of which has appeared in the *Medical Record*,[1] indicates that claims for the efficacy of this drug in the treatment of heart disease are based on almost purely subjective evidence in a large group of elderly patients treated with large doses of vitamin E after a failure to control symptoms with other usual methods of cardiac therapy. Objective evidence that the drug provides any real benefit in heart disease is lacking. Electrocardiographic changes either are not cited or show no true evidence of physiologic improvement. Evidence that vitamin E prolongs the life of cardiac patients as compared with control groups of patients treated by usual methods is entirely lacking. In a panel discussion on cardiac therapy at the June 1947 meeting of the American Medical Association, the following statement was made: "Vitamin E is of no value in coronary heart disease, hypertension or rheumatic heart disease." Vitamin E has no known pharmacologic action supporting the belief that it has a vasodilating action, a myotonic effect or an ability to repair damaged heart muscle in human beings. Reports of animal experimentation of the activity of vitamin E on cardiac musculature are so far inconclusive.[2] The most that can now be said relative to vitamin E treatment is that doses being prescribed appear relatively nontoxic and that subjective benefits claimed may justify a series of well controlled experimental studies in human heart disease to determine whether purely psychologic or real physiologic changes are involved.

GENERAL PRACTITIONER'S AWARD

William Lowry Pressly, M.D.

At the interim session of the American Medical Association held in St. Louis the gold medal of the Association "for exceptional service by a general practitioner" was awarded by the House of Delegates to Dr. W. L. Pressly of Due West, S. C. His career is the prototype of the many thousands of general practitioners who are devoting their lives to the care of the sick in rural communities and in large cities all over the United States. Dr. Pressly was born in Due West and left there only for his medical education, internship and residency. He was born in 1887 and graduated at Erskine College in his home town in 1908. He then received his medical education at Emory University and served as intern and resident at Jefferson Hospital in Roanoke, Va., from his graduation in 1912 to 1915. Incidentally, he played professional baseball both before and after his graduation in medicine and was also manager of a baseball team. After his return to practice in Due West thirty-two years ago, he served as president of the Abbeville County Medical Society. He was a councillor of the South Carolina Medical Association from 1933 to 1940, when he was elected president. He has been chairman of the General Practice Section of the Southern Medical Association and of the South Carolina Academy of General Practice. Since 1939 he has been a member of the executive committee of the South Carolina State Board of Health and during World War II he was state head of the Procurement and Assignment Service. The general practitioner's award this year was selected in an unusual manner in that twenty-four individual states made nominations, from which the Board of Trustees selected three and the House of Delegates elected one. Second in the selection were Dr. Lyle Hare of Spearfish, S. D., and third, Dr. Charles Manley Horton of Franklin, La.

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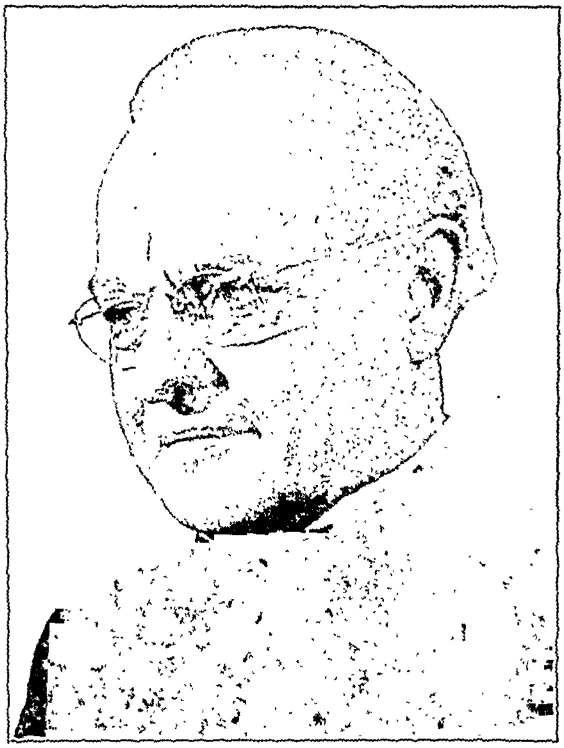
[1] Vogelsang, A.; Shute, E., and Shute, W.: Some Medical Uses of Vitamin E. M. Rec. **161:** 155-161 (March) 1948. Molotchick, M. B.: Case Histories of Vitamin E Therapy in Heart Disease. ibid. **160:** 667-670 (Nov.) 1947. Shute, Wilfrid E.; Shute, Evan V.; and Vogelsang, Arthur B.: Vitamin E in Heart Disease. III. The Hypertensive Heart, ibid. **160:** 230-234 (April) 1947. Vogelsang, Arthur B.; Shute, Evan V., and Shute, Wilfrid E.: Vitamin E in Heart Disease. II. The Rheumatic Heart. ibid. **160:** 163-166 (March) 1947. Shute, W.; Shute, E., and Vogelsang, A.: Vitamin E in Heart Disease. I. The Anginal Heart, ibid. **160:** 91-96 (Feb.) 1947. Vogelsang, A.; Shute, E., and Shute, W.: Vitamin E in Heart Disease. Preliminary Report, ibid. **160:** 21-26 (Jan.) 1947.

[2] Bovier, W. M.; Yanz, N., and Grelis, M. E.: The Effect of a-Tocopherol Phosphate, Digitoxin and Certain Compounds Related to the Latter on Cardiac Muscle Metabolism in Vitro. J. Pharmacol. & Exper. Therap. **88:** 373-381 (Dec.) 1946. Gullickson, T. W., and Calverley, C. E.: Cardiac Failure in Cattle on Vitamin E-Free Rations as Revealed by Electrocardiograms. Science **104:** 312-313 (Oct.) 1946.

FATHER SCHWITALLA HONORED

For the first time in the history of the American Medical Association a gold medal and a citation were awarded at the interim session in St. Louis to a distinguished layman who had served to advance the ideals of American medicine and who had contributed notably to the public welfare. Father Alphonse Mary Schwitalla, thus distinguished, is known to many thousands of physicians and workers in the field of the hospital and of medical care. He was born in Beuthen, Upper Silesia, Germany, Nov. 27, 1882. With his parents he came to the United States in 1885. After graduation from St. Louis University in 1907 with the degree of bachelor of arts, he received his master's degree in 1908 and the degree of doctor of philosophy in zoology at Johns Hopkins University in 1921. In 1900 he joined the Jesuit order, and was ordained a priest in 1915. After his graduation from St. Louis University, he was instructor in chemistry at St. Xavier College, Cincinnati, and became instructor in biology and physiology in his alma mater in 1910. He served as instructor of chemistry at Rockhurst College, Kansas City, Mo., from 1916 to 1918 and as associate professor of biology at St. Louis University from 1921 to 1924, becoming professor of biology in 1924 and continuing his teaching in this field until 1946. In 1927 he became dean of the School of Medicine of St. Louis University, in 1928 also dean of the School of Nursing and in 1924 regent of the School of Dentistry. Father Schwitalla has been honored by many medical and hospital organizations for his magnificent services, particularly to medical education but also toward sustaining the ideals of freedom which characterize American medicine. He was president of the Catholic Hospital Association from 1928 to 1947, president of the North Central Association of Colleges and Secondary Schools and honorary vice president of the American Social Hygiene Association. During the war he served on many councils and committees dealing with education and with public health. He has been a member of the Advisory Board on Health Services of the American Red Cross and of the Advisory Committee of the Council on Medical Education and Hospitals. During World War I he was a major and served as a chaplain in the United States Army. His scholarship earned membership in Phi Beta Kappa, Sigma Xi and Alpha Omega Alpha. He has been editor of *Hospital Progress* since 1928 and of the *Linacre Quarterly* since 1945. His writings have served to inspire and stimulate many others in the medical field. He was a member of the original Committee on the Costs of Medical Care and signed the minority report for sustaining freedom in medicine. Father Schwitalla has appeared frequently before Congressional committees in behalf of sound practice in medical care. He has spoken brilliantly on many platforms throughout the nation. Because of ill health, which has incapacitated him largely for almost a year, Father Schwitalla resigned his deanship of the St. Louis University College of Medicine on December 12. Certainly no one merits more than does he the distinguished honor that was conferred on him by the American Medical Association.



Father Alphonse Mary Schwitalla, S. J.

CONGRESS ON INDUSTRIAL HEALTH

The Ninth Annual Congress on Industrial Health is now being organized jointly by the Industrial Hygiene Division of the Public Health Service and the Council on Industrial Health of the American Medical Association. Other organizations have helped in the planning or will participate in the sessions of the Congress. The meetings will be held January 18-19 at the Drake Hotel in Chicago, with preliminary panel committee conferences the previous day. The opening general session on Tuesday morning, January 18, will define the purposes of the Congress. The keynote address of the worker's interest in health will be presented by an outstanding labor leader. A symposium will be conducted on "New Horizons in Industrial Health" to be participated in by Surgeon General Leonard A. Scheele of the Public Health Service, President Ned Dearborn of the National Safety Council and President Joseph G. Norby of the American Hospital Association. The Congress will then resolve itself into four panels: Scope and Distribution of Medical Service in Industry, Environmental Hygiene, Medical Aspects of Industrial Human Relations, and Health Education. Representation from labor, management, insurance and others interested will be invited, in anticipation of later conferences to define closer relations between the worker, the employer and medical-health facilities. To further this objective, January 16-22 will be officially proclaimed "Industrial Health Week" in Chicago and unusual effort will be made to concentrate community interest on the health of those who work for a living.

ORGANIZATION SECTION

Proceedings of the St. Louis Interim Session

MINUTES OF THE INTERIM SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN ST. LOUIS, NOVEMBER 30-DECEMBER 1, 1948

HOUSE OF DELEGATES

First Meeting—Tuesday Morning, November 30

The House of Delegates convened in Assembly Room 2 of the St. Louis Municipal Auditorium, Fourteenth Street at Market Street, St. Louis, and was called to order at 10:00 a. m. by the Speaker, Dr. F. F. Borzell.

Preliminary Report of the Reference Committee on Credentials

Dr. H. B. Everett, Chairman, stated that 129 delegates had registered up to the present time, and the speaker announced that that constituted a quorum.

Roll Call

The Secretary called the roll.

Adoption of Proceedings of Chicago Session in June 1948

On motion of Dr. Walter E. Vest, West Virginia, seconded by several and carried, the House adopted the Proceedings of the Annual Session in Chicago in June 1948 as published.

General Practitioner's Award

Dr. E. L. Henderson, Chairman, Board of Trustees, presented the following statement:

Twenty-three nominations for the General Practitioner Award were submitted to the Board of Trustees by twenty-three different state medical associations. All twenty-three nominees are distinguished general practitioners, noted in their respective states for their long and devoted service. The Board of Trustees was confronted with an extremely difficult task in attempting to eliminate twenty of these nominees in order to present to you the three nominations which were finally selected.

The only basis on which the Board of Trustees made its selection was the material presented in support of the candidate from each state. In several instances, the material presented was too insufficient in the sense of providing supporting data for the Board to reach any conclusion; for example, here is a telegram received from one state which is the sole information transmitted to the Board of Trustees—no supporting data whatever were forwarded for the Board to consider. Here is a letter from another state which, again, constitutes the sole material presented. On the other hand, here is the material presented from one state, which, as you see, is voluminous and provides sufficient material for a thorough analysis.

The three candidates selected from those submitted by the state associations, Dr. Lyle ("Bunny") Hare of Spearfish, S. D., Dr. Charles Manly Horton of Franklin, La., and Dr. W. L. ("Buck") Pressly of Due West, S. C., are all strongly recommended by their respective state medical associations and have earned the love and respect of the public which they have so loyally served. It will not be possible to read the specific testimonials received for each of these distinguished general practitioners, but I can assure you that the degree of warm feeling for and the professional and community support of these men, as evidenced by the material submitted, are tremendous.

I present, for your information, in alphabetical order, the following brief biographic sketches of the three general practitioners whose names the Board of Trustees herewith presents in order that the House of Delegates may select the recipient of the American Medical Association's General Practitioner's Award:

Dr. Lyle ("Bunny") Hare, Spearfish, S. D., was born in Cedar Rapids, Neb., Nov. 26, 1885. His family moved to Hill City, S. D., when he was 4 years old. He graduated at the University of South Dakota in 1907 and at the University of Illinois College of Medicine in 1911. He interned at University Hospital, Chicago. He has held numerous public and professional positions. He was secretary and president of his local district medical society and at one time was mayor of his town. He served as a captain in the Medical Corps in World War I and was a post commander of the American Legion. He has contributed a considerable amount of his time to the stimulation of the Boy and Girl Scout organizations, the Red Cross and the growth and improvement of his original alma mater, the Black Hills Teachers' College, which in October 1947 honored him by naming its new stadium "The Lyle Hare Field." "Bunny" Hare has been a general practitioner in Spearfish for 37 years.

Dr. Charles Manly Horton, Franklin, La., was born in Lowndesville, S. C., Oct. 23, 1879, the son of a country doctor. He graduated at Furman University with an A.B. degree. Dr. Horton worked his way through the Tulane University School of Medicine; he was a telegrapher and train dispatcher for local railroads in New Orleans. He interned at New Orleans Charity Hospital and began practice in Franklin, La., in September 1911 and has continued there in general practice to the present time. He has been president of the Louisiana State Medical Association and is a member of the Louisiana Academy of General Practice and the American Academy of General Practice. He is also a member of the Louisiana State Board of Medical Examiners and the Louisiana Physicians' Service. He is a past president of the Franklin Rotary Club, a member of the Elks Club and a Mason.

Dr. W. L. ("Buck") Pressly, Due West, S. C., was born in Due West in 1887, graduated with an A.B. degree at Erskine College in 1908, received his medical degree from Emory University School of Medicine in 1912, and served as intern and resident at Jefferson Hospital, Roanoke, Va., from 1912 to 1915. Dr. Pressly has held numerous offices, including that of president of the Abbeville County (South Carolina) Medical Society, 1920; the Third (South Carolina) District Medical Association, 1926, and the South Carolina Medical Association, 1940. He served as a councillor of his state association from 1933 to 1940, when he was elected president. He was chairman of the General Practice Section of the Southern Medical Association in 1943-1944 and is at present chairman of the South Carolina Academy of General Practice. Dr. Pressly has been a member of the executive committee of the South Carolina State Board of Health since 1939, and was state head of the Procurement and Assignment Division of Selective Service during World War II. He is noted for his achievements in the field of public health as well as in general practice and has been called the "Father of Public Health" in the county where he practices. He sponsored an early campaign against typhoid and initiated "Well Baby Clinics" and is considered an authority on rural health and sanitation in his state. "Buck" Pressly has been in general practice in his home town of Due West, S. C., for thirty-two years.

The Speaker requested the tellers, who had previously been informed of their appointment, namely, Drs. Roland W. Stahr, Nevada, chairman, George P. Johnston, Wyoming, John H. Moore, North Dakota, William M. Skipp, Ohio, and James Stevenson, Oklahoma, to distribute the ballots.

Presentation of Dr. A. S. Fernando, Secretary of the Philippine Medical Association

While the tellers were distributing the ballots, the Secretary presented Dr. A. S. Fernando, Secretary of the Philippine Medical Association, who took a bow.

General Practitioner's Award (Continued)

The ballots were collected and computed, indicating that Dr. Hare had received 52 votes, Dr. Horton 17 and Dr. Pressly 97, and the Speaker announced that Dr. W. L. Pressly, Due West, S. C., having received the majority of the votes cast, had received the General Practitioner's Award of the American Medical Association.

Address of the Speaker, Dr. F. F. Borzell

Dr. James R. Reuling, New York, Vice Speaker, took the chair.

Dr. F. F. Borzell presented the following address containing a request for the confirmation of the appointment of reference committees, which was referred to the Reference Committee on Reports of Officers:

Gentlemen:—I approach this, the third interim session and my initial session as Speaker, with prayerful contemplation. There have been few, if any, sessions of the House of Delegates as momentous as this one. You will be called on to make decisions that may have far reaching effects on the future of America and especially American medicine. May God give us the wisdom we need to guide us aright.

You are the legislative body of American medicine. It is your responsibility to determine policies and so direct the affairs of the American Medical Association that the high standards of medicine are perpetuated, sustained progress is insured and the fundamental principles of our profession defended. This session will undoubtedly present problems of major proportions.

Our system of reference committees provides effective mechanisms for sober deliberation and free expression.

Each delegate and member of the House should see to it that these committees have the benefit of your opinions in formulating their decisions. It is hoped that tomorrow morning may be given over to reference committee hearings.

The Vice Speaker will meet the chairmen of these committees immediately after this morning's session to discuss with them details of procedure.

Your attention is called to the fact that at our last session we adopted a revised Constitution and By-Laws by which we are now governed. The Speaker would request that the House consider the advisability of clarification of Division Three, Chapter IX, Sec. 3 (C), of the By-Laws, referrable to Executive Session. As presently written, the Speaker must rule that each person other than the constituted members of the House of Delegates who wish to be granted the privilege of attendance at Executive Sessions must be admitted separately and by a majority rule.

You have all received a communication from the Speaker. It is anticipated that our business will be expedited by your cooperation along the lines suggested. The Speaker would also caution the House to weigh carefully all decisions having an impact on the public. In other words, we should weigh carefully the public relations effect of all our deliberations. Certain events and social trends cannot be overlooked. The Speaker would suggest that the reference committees utilize freely the advisory facilities of our public relations services in the formulation of pronouncements with public relations implications.

In accordance with the By-Laws the personnel of our standing reference committees was announced and published in The Journal of the American Medical Association of October 30. As is to be anticipated, a number of changes must be made because of changes of delegates. I find it necessary, therefore, to read the appointments as of today. They are as follows:

Reference Committees

SECTIONS AND SECTION WORK

Henry S. Ruth, Section on Anesthesiology, Chairman.
Jean Paul Pratt, Section on Obstetrics and Gynecology.
Benjamin H. Minchew, Georgia.
Homer L. Pearson Jr., Florida.
Thomas A. Foster, Maine.

RULES AND ORDER OF BUSINESS

Philip W. Morgan, Kansas, Chairman.
Stephen R. Monteith, New York.
Edward H. McLean, Oregon.
Ivan Fawcett, West Virginia.
Wyman D. Barrett, Michigan.

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Creighton Barker, Connecticut, Chairman.
Coursen B. Conklin, District of Columbia.
Samuel J. McClendon, California.
Hans H. F. Reese, Section on Nervous and Mental Diseases.
Fred H. Muller, Illinois.

MEDICAL EDUCATION

George W. Kosmak, New York, Chairman.
William Bates, Pennsylvania.
Mather Pfeiffenberger, Illinois.
Louis A. Buie, Section on Gastro-Enterology and Proctology.
Warde B. Allan, Maryland.

LEGISLATION AND PUBLIC RELATIONS

Thomas K. Lewis, New Jersey, Chairman.
Clifford C. Sherburne, Ohio.
John W. Cline, California.
Charles H. Phifer, Illinois.
Edward H. Cary, Texas.

HYGIENE AND PUBLIC HEALTH

Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, Chairman.
W. Palmer Dearing, U. S. Public Health Service.
Gerald V. Caughlan, Iowa.
Karl S. J. Hohlen, Nebraska.
Albert F. R. Andresen, New York.

AMENDMENTS TO CONSTITUTION AND BY-LAWS

Floyd S. Winslow, New York, Chairman.
James P. Wall, Mississippi.
William R. Brooksher, Arkansas.
Val H. Fuchs, Louisiana.
Donald Cass, California.

REPORTS OF OFFICERS

James Z. Appel, Pennsylvania, Chairman.
Joshua B. Lukins, Kentucky.
Willis I. Lewis, Illinois.
Deering G. Smith, New Hampshire.
E. Vincent Askey, California.

CREDENTIALS

Hiram B. Everett, Tennessee, Chairman.
Carl A. Lincke, Ohio.
Edward P. Flood, New York.
Raymond F. Peterson, Montana.
Charles F. Strosnider, North Carolina.

INDUSTRIAL HEALTH

Thomas K. Gruber, Michigan, Chairman.
Homer G. Hamer, Indiana.
William L. Benedict, Section on Ophthalmology.
Theodore H. Harwood, Vermont.
H. B. Mulholland, Virginia.

EXECUTIVE SESSION

J. Stanley Kenney, New York, Chairman.
Jesse D. Hamer, Arizona.
Claude R. Keyport, Michigan.
Erling W. Hansen, Minnesota.
Walter G. Phippen, Massachusetts.

MISCELLANEOUS BUSINESS

Walter E. Vest, West Virginia, Chairman.
Herbert H. Bauckus, New York.
Britton E. Pickett Sr., Texas.
James P. Kerby, Utah.
J. Wallace Hurff, New Jersey.

SERGEANTS-AT-ARMS

James L. Whitehill, Pennsylvania, Chairman.
Stephen E. Gavin, Wisconsin.
Hugh P. Smith, South Carolina.

TELLERS

Roland W. Stahr, Nevada, Chairman.
George P. Johnston, Wyoming.
John H. Moore, North Dakota.
William M. Skipp, Ohio.
James Stevenson, Oklahoma.

The Speaker requests authorization for the appointment of two reference committees with personnel as follows:

MEDICAL SERVICE AND PREPAYMENT INSURANCE PLANS

Raymond L. Zech, Washington, Chairman.
William H. Halley, Colorado.
Leland S. McKittrick, Massachusetts.
Joseph F. Londrigan, New Jersey.
Forrest J. Pinkerton, Hawaii.
Howard E. Griffin, Section on General Practice.
William L. Estes Jr., Pennsylvania.
F. J. L. Blasingame, Texas.

EMERGENCY MEDICAL SERVICE

Thomas F. Thornton, Iowa, Chairman.
James Beebe, Delaware.
William A. Coventry, Minnesota.
Howard B. Goodrich, Missouri.
F. S. Crockett, Indiana.
George E. Armstrong, United States Army, Consultant.
Joel T. Boone, United States Navy, Consultant.

It was moved by Dr. James Q. Graves, Louisiana, seconded by several and carried, that the House approve the appointment of the two special reference committees.

On motion of Dr. Val H. Fuchs, Louisiana, seconded by several and carried, the House confirmed the appointments to reference committees as read by the Speaker.

Dr. E. Vincent Askey, California, reported that Dr. John H. Green of California, appointee to one of the reference committees, was unable to be present, and the Speaker announced that he would reappoint at a later time.

Remarks of President, Dr. R. L. Sensenich

Dr. Sensenich, the President, presented a few remarks.

Presentation of Dr. Ernest E. Irons, President-Elect

The Speaker presented Dr. Ernest E. Irons, Chicago, President-Elect, who stated that he had no remarks to make.

Report of Secretary

Dr. George F. Lull, Secretary, presented his report as contained in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

Report of Board of Trustees

Dr. E. L. Henderson, Chairman, presented the report of the Board of Trustees as contained in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary with the following exceptions: The report of the Executive Assistant, pages 50 to 55 inclusive in the Handbook, was referred to the Reference Committee on Legislation and Public Relations; the report of the Council on Industrial Health, pages 67 to 69 inclusive, to the Reference Committee on Industrial Health, and the report of the Council on National Emergency Medical Service, pages 70-71, to the Reference Committee on Emergency Medical Service.

Supplementary Report of Board of Trustees

Dr. E. L. Henderson, Chairman, presented the following supplementary report:

PROGRESS REPORT OF THE COMMITTEE ON HOSPITALS AND THE PRACTICE OF MEDICINE

The analysis of the laws of the various states concerning what constitutes the practice of medicine has not yet been completed by the Bureau of Legal Medicine and Legislation of the Association. Until these laws are collected, studied and appraised by both the Bureau and the Committee on Hospitals and the Practice of Medicine it seems absurd to attempt to make a report on the subject assigned to this committee. However, certain observations are definitely in order. This report will be, or could be, used as a background for our thinking until the above-mentioned information is available and for action after there has been an opportunity to study the legal wordings of the various state laws. It is assumed at the beginning that all of the laws will differ somewhat and that many things will be legal, not necessarily ethical, in one state and illegal in another. The interpretation of the various state laws will have to be studied in the light of judicial actions, if any, that have been made in the application of the laws to specific cases.

The American Medical Association has often been severely criticized for its lack of aggressive action in certain matters that have been brought before it. At the time of writing this report, the Chairman received a letter from a prominent physician who rather doubts the willingness of the American Medical Association to take any specific action in a disciplinary fashion toward those institutions which, in his opinion, violate his conceptions of the principles of medical ethics. Again, it must be insisted that every physician should know exactly what are and what are not the duties and obligations of the parent body and what are the legal requirements necessary for the American Medical Association to continue to live and have its being and to serve the medical profession. The first thing necessary for a thorough understanding of rights and privileges of its members is to know how and for what the American Medical Association was created.

Article I of the Constitution states: "The name of this corporation is the American Medical Association. It is a federacy of its constituent associations." In other words, the American Medical Association receives whatever of authority it has from its constituent state medical associations, which, in turn, are federations of their local component county or district and territorial medical societies whence all the authority comes.

Article II says: "The objects of the Association are to promote the science and art of medicine and the betterment of public health." A simple statement but thoroughly specific. The object is, to put it another way, to encourage the education of medical students and physicians so that the American people may live longer, more comfortable and better lives, no more—no less.

In the By-Laws, Chapter IX, Section I, the Judicial Council's duties are completely outlined. It is specifically stated that this Council shall have authority in all matters of ethics and also in controversial matters between individuals and groups, et cetera, but only when these matters are properly brought before it through proper channels. If the situation cannot be adjudicated at the level at which it occurs and if through the good offices of the Judicial Council the various differences cannot be settled, then formal charges may be presented and those charges prosecuted before the Judicial Council, and the Council then has the power to acquit, admonish, suspend or expel the accused.

An example is worthy of discussion: A physician is employed by a hospital. He has signed a contract. He then becomes dissatisfied with his arrangement with the institution and believes that the hospital is exploiting him. He must, of course, satisfy not only the hospital management but the medical staff of the institution. This man, the staff or the institution, separately or individually, may have a real or fancied grievance. The logical place for a physician to go in such a case would be the proper committee of his county medical society. If for one reason or another redress is not forthcoming, he may appeal to his state association, and then, if redress is not his, he may appeal to the Judicial Council of the American Medical Association. In all three instances all parties to the controversy, hospital, employed physician or staff should be brought together in an attempt through proper channels to settle their differences.

The Judicial Council at the national level is set up, first, to try to settle differences; secondly, it is one place where charges may be brought against a member for unethical conduct. The machinery is all set up, ready to go, but the methods have seldom been used for the settlement of these various ills that are the basis of complaint by many physicians.

It must be admitted that in many places in the Principles of Medical Ethics the wording is such as to make many things confusing. However, we are living in a modern, practical world and some things are done, if the Principles were literally translated, that would be ethically questionable. The key to the Principles, however, is one sentence, which is contained in Article VI, Section 3: "The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole." This statement is so broad that the final interpretation can only be the opinion as to whether certain practices are or are not good for the people. Who can make such an interpretation except:

1. A committee of the local county medical society?
2. A committee of the state medical association?
3. A committee from the American Medical Association (the Judicial Council)?
4. The Judicial Council acting as a jury?

The membership of the American Medical Association comprises medical men of as many different colors as are in the spectrum. At one end is the physician who is not connected in any way with any organized business. He practices private medicine alone. He pays his own rent, maintains his own fees and depends for his livelihood on his own individual professional and business methods. He is dependent on no one but the patient who consults him. At the other end of the spectrum is the physician employed by an industrial organization on a fulltime salary, who does all of the medical work of the plant and even runs a temporary hospital with x-ray and laboratory services to care for immediate emergencies around the plant and supervises the physicial health for employment and continued health during such employment of the employees. Between these two extremes are all sorts of arrangements with all their gradations of employment, salary, bonus or what have you, from the doctor who employs a young doctor to help him to the clinical group employed as salaried men or on a salaried and commission basis. This includes the Army, Navy and Public Health Service. The American Medical Association has recognized all of these persons as eligible to Fellowship if they are members of their component county and constituent state medical organizations or are members of the government services, et cetera. Therefore, it is necessary that the Principles of Medical Ethics be broad enough to cover and protect all these persons so long as the work they do is to the public benefit.

In order to answer the critics of the American Medical Association on some of these matters which are causing dissension and controversy, such as "the hospitals and medical schools practicing medicine," it must be remembered that when such institutions violate that which we think is the "Code," some physician is guilty of unethical conduct or he is not, and he is the one to carry before the Judicial Council with charges of unethical conduct against him. The decision can only be made on the evidence presented.

Then it must be remembered that while we as physicians have our own Principles of Medical Ethics, those Principles may be the cause of our doing something which, under the laws of a state, is illegal, subjecting us as organizations or as individuals to prosecution in the civil courts. A thing may be unethical according to our interpretation but may be perfectly legal.

Until the laws of all of the states are available for study and until recommendations can be made that will hold water, both ethically and legally, it behooves us to attempt to settle at the local level all matters of controversy between medical men and the various institutions where they work and practice. This can be done if personalities can be forgotten and physicians are men of good will and will sit down around a table and find out, first, on what points agreements can be reached; secondly, what points exist where differences of opinion are slightly divergent; thirdly, what points are of maximum disagreement, and finally, if it can be resolved to compromise everything but broad general principles concerning that which is for the public good. It will be for the good of every physician.

Respectfully submitted,

Elmer Hess, Chairman.

THE FUTURE OF MEDICINE IN THE UNITED STATES

The Board of Trustees has given long and careful consideration to some of the problems which intimately concern the future of the medical profession of the United States. The Board is aware of the proposed legislation relative to the nature of medical practice, of legislation for the establishment of a department of health, education and welfare, of legislation for the expansion of the Social Security Act and of several other matters of extreme significance.

The funds of the American Medical Association at this time are adequate to meet promptly any contingency that may arise, and the Board of Trustees is not averse to the expenditure of its total funds if need be to oppose any enslavement of the medical profession or any effort to attack the fundamental principles of liberty and democracy which are characteristic of the American nation. We are confident of the honesty, sincerity and altruism of our position. We are earnest in our effort to maintain standards of medical science and medical care which are responsible for the high position that American medicine occupies in the world today. We propose to resist determinedly any attempt at deterioration of these standards, and we shall give to this effort all of the strength and the courage of conviction that the American Medical Association, through its officers, its House of Delegates and its membership, can muster.

Conceivably additional funds in large amounts may be required to present to the American people the fullest possible information relative to American medicine and its point of view so that we may have the complete public support that we merit. If the Board of Trustees should find that such additional funds are required, the Board knows that it can rely on the House of Delegates to take any action that may be necessary under the Constitution and By-Laws of the Association to develop such funds. The proposal has been made that the House of Delegates authorize the Board of Trustees at this time to take such action as the Constitution and By-Laws of the Association permit in order to meet an emergency. That decision rests, of course, with the House of Delegates. We know that we can rely on your full support.

ESTABLISHMENT OF A PLANNING COMMITTEE

The Board of Trustees has adopted a recommendation of the Executive Committee to establish a Planning Committee.

That committee, the Board feels, should consist of seven members: four from the Board of Trustees and officers and three from the House of Delegates, with the President, the Chairman of the Board and the Secretary and General Manager as ex officio members, all of whom shall be voting members, and at each annual meeting the Board shall reconsider the personnel of this committee and make such appointments or changes as may seem necessary.

At this time, the Board announces the appointment of the committee as follows:

Louis H. Bauer, New York	Board of Trustees
Gunnar Gundersen, Wisconsin	
Edwin S. Hamilton, Illinois	
Walter B. Martin, Virginia	
William Bates, Pennsylvania	House of Delegates
John W. Cline, California	
R. B. Robins, Arkansas	
President	
Chairman of Board of Trustees	
Secretary and General Manager	

WORLD MEDICAL ASSOCIATION

Dr. Henderson called on Dr. John W. Cline, California, to present a report on the World Medical Association, which reads as follows:

Mr. Speaker, Mr. Chairman, Members of the House: In keeping with the original remarks of the Speaker, I shall make every effort at brevity.

As you probably are all acquainted, the second meeting of the World Medical Association was held in Geneva in September. The first meeting, the organization meeting, had been held in Paris in 1947. At that time the organization was set up. Dr. Louis Bauer became Secretary General; the members of the Council were chosen from various nations, and our representative on that Council was Dr. E. L. Henderson.

The delegates to the World Medical Association were Dr. E. L. Henderson and Dr. R. L. Sensenich. The alternate delegates were Dr. Creighton Barker of Connecticut and myself, and we attended those meetings.

I do not propose to go into any detailed discussion of the various things which happened there, but I think it is of some importance to know that there is much closer relationship between the medical men of the world than there is between most other groups, perhaps. There is a tendency for a similarity of thinking—not a uniform thinking but a similarity of thinking—by medical men.

The problems which confront medicine throughout the world bear some relationship in the various countries. Some of them are identical.

A large portion of the time of this meeting was taken up with setting up twelve points or, rather, principles by which governmental insurance schemes should be governed for the protection and welfare of the people of those countries in the maintenance or improvement of the standard of medical care.

The aims of the World Medical Association, I think you would agree, are entirely laudatory. They are, first, to promote closer ties among the national medical organizations, among doctors of the world, by personal contact and by all other means available; second, to maintain the honor and protect the interests of the medical profession; third, to study and report on professional problems which confront the medical profession in different countries; fourth, to organize an exchange of information on matters of interest to the medical profession; fifth, to establish relations with and to present views of the medical profession to the World Health Organization, Unesco, and other appropriate bodies; sixth, to assist the people of the world to attain the highest possible level of health, and seventh, to promote world peace.

I think you will agree, all of you, that those are laudable ambitions.

When I mention the World Health Organization, I should like to point out the distinction between it and the World Medical Association. The World Health Organization is a group of governmental agencies primarily interested in public health, and the World Medical Association is an association of national medical associations. It bears about the same relationship to the World Health Organization that our American Medical Association would bear to official organizations of public health officers in this country.

Briefly, what has been accomplished so far by the World Medical Association has been the investigation of war crimes and the publishing of the report on that; the issuing of a new oath relative to the conduct of physicians under any circumstances such as we have recently seen during the war, and the status of the medical profession in twenty-three countries to date. One of the by-products has been the institution of strong medical associations in certain countries which had weak associations before; the establishment of national medical associations in some countries where none previously existed. Those of you who remember, or if you will think back to, the influence the American Medical Association has had on the standards of medical education and the standards of medical care in this country, I think will realize the great potentiality that an organization such as this, encouraging and aiding in the establishment of strong medical associations in other countries may have.

Without strong medical associations, the standards of the practice of medicine are low and the standards of medical education are poor.

It has concerned itself not only with undergraduate education. There is an extensive program on foot in studying the undergraduate education of all the countries of the world. I speak of undergraduate medical education, but there is also a program to study the graduate education of all of the countries of the world.

There is an effort made to improve the level of medical advertising throughout the world. There are few countries that have standards comparable to ours. The national medical journals of many of the other associations carry advertising of a character and type that would not be tolerated by any of us in our journals. Progress is being made in that direction.

There also is the effort to control nostrums and quackery in the rest of the world. These are just some items. I do not think that I need to continue any further but I think that it is incumbent on us, as Americans who occupy a more favored position—just as we do in the world economically and in every other respect, so do we in medicine—I think it is incumbent on us to extend the hand of fellowship and aid to the doctors of the other countries of the world to assist them where we can to improve their standards, and the standards of care and the lot of the peoples in those countries.

I do not think that this is an entirely visionary scheme. It is one which has great practical application, and it will affect the whole world extremely favorably, if we are able to do this. The exact, practical steps might be difficult to conceive, but in any new organization progress must be made slowly.

The organization of the World Medical Association was initially made possible by the generosity of certain industrialists in this country who provided the funds. It is not reasonable to expect, as time goes on, these persons whose interest in medicine is indirect, and not direct, as is ours, to continue that support indefinitely. We probably are going to have to look for financial support, largely, to our membership. The medical profession in most of the countries is impoverished. It is not reasonable to expect most of these medical associations to be able, in large measure, to finance it. They all seem willing to contribute in the measure possible for them to do so. Certain countries which are better off than others have certain restrictions which do not permit them to send money out of the country. Therefore, I think it falls on us, as members of the medical profession in this country, to make it possible for the continuation of the World Medical Association.

Dr. Bauer has asked me to announce that a secretary from the World Medical Association is here and would be happy to enrol any of you who would care to take out memberships and that he hopes that every member of the House of Delegates will feel that this is a sufficiently worthy project to warrant his support.

SUPPLEMENTARY REPORT OF COUNCIL ON NATIONAL EMERGENCY MEDICAL SERVICE ON ATTITUDE OF AMERICAN MEDICAL ASSOCIATION TO POSSIBLE RETENTION OF MEDICAL OFFICERS

Dr. Henderson presented the following report:

The executive committee of the Council on National Emergency Medical Service has received and reviewed a letter addressed to Dr. Roscoe L. Sensenich, President of the American Medical Association, dated Oct. 15, 1948, in which the question is raised as to the attitude of the American Medical Association on the possible retention of medical officers in the Army who were deferred during the war years to complete their education and who are now on active duty and will in the next months complete twenty-four months of obligated duty.

Inasmuch as this involves officers now on active duty, it is believed that the question can only be resolved by the Secretary of Defense. It is assumed that the Armed Forces Medical Advisory Committee to the Secretary of Defense will have sufficient information at its disposal to give an answer should the need for retention of medical officers become urgent.

The Council on National Emergency Medical Service desires to inform the Board of Trustees and the House of Delegates that there are being considered numerous proposals for the amendment of the Selective Service Act of 1948 to provide special legislation for the registration and drafting of doctors and other professional personnel in a special category above the age limits established for other U. S. citizens. The Selective Service Act of 1948 provides for the registration of male citizens of the United States up to the age of 26 years, including doctors of medicine. Physicians in this age group, because of their professional training, are eligible for a commission in the armed forces; hence there can be no question of hardship, dependency or professional deferment.

1. It is recommended by the Council on National Emergency Medical Service to the House of Delegates that the American Medical Association favors the call-up and commissioning of the number of physicians in this age group already registered under the Selective Service Act of 1948 that are required by the armed forces to accomplish their primary mission of the defense of our country.

2. The Council further recommends to the House of Delegates that it reaffirm its support of the democratic principles of our country and in so doing object to any special legislation which directly or indirectly singles out the medical profession for registration or draft in categories other than those established for their fellow citizens.

3. It is further recommended that the House of Delegates of the American Medical Association authorize and urge the Council on National Emergency Medical Service, the officers and Trustees of the Association, as well as its constituent organizations operating through their committees on emergency medical service, to initiate and support a program for the recruitment of a sufficient number of qualified physicians for the armed forces.

4. The Council on National Emergency Medical Service recommends to the House of Delegates that the resolution passed by it in June 1948 relative to the development of a *resident* training program in the Department of Army and the Department of Navy, be clarified. Such a program represents the highest type of medical education but cannot be supported as to recruitment program for the regular service of a government agency. Full utilization of civilian teachers and civilian clinician and hospital facilities for such a graduate training program of the armed forces or any other government agency is essential to our national economy and the maintenance of the established high level of medical educational standards and training. Such a graduate training program for the armed forces or for any other government agency must be limited by the actual needs of its peacetime establishment and the support of its primary mission as established by Congress. In our

democratic form of government an adequate number of medical specialists always have been and always will be available to serve in the defense of our country.

CIRCULATION OF BULLETINS AND OTHER INFORMATION FROM HEADQUARTERS OFFICE

It has been voted by the Board of Trustees that all messages to state and county societies shall emanate from the office of the Secretary and General Manager and that all bulletins issued by independent offices in the headquarters shall constitute portions of the Secretary's News Letter.

REPORT OF COMMITTEE ON VETERANS AFFAIRS

Dr. H. H. Bauckus, Chairman of the Committee on Veterans Affairs, at the request of Dr. Henderson, presented a report, as follows:

Your Committee on Veterans Affairs has functioned without specific instructions from this House of Delegates.

It has been our purpose to function in the interest of veterans, the public and the system of medical care in this country, which has functioned so well for so long.

The first formal meeting of the committee took place in Washington, D. C., in early May 1948. It was a joint meeting with the Committee on Veterans Affairs of the American Hospital Association. We should say, also, that all subsequent actions were joint actions by the two committees. In the course of this meeting a number of facts were developed. Among those important to mention at this moment are the following:

The medical and hospital service program of the Veterans Administration, as it relates to the care of veterans with non-service-connected disabilities, is making an impact of tremendous magnitude on the civilian hospital program that is being developed under the provisions of the Hill-Burton Bill and the developments that have taken place independent of federal aid.

It was learned that leaders in this expansion movement contemplate the expansion of veterans hospitals to a total of 300,000 beds.

There are now approximately 18,860,000 veterans, a large percentage of the adult population of the nation. We learn that over 80 per cent of all admissions to veterans hospitals of all classes are for disabilities not due to service; that the veterans hospitals already in existence are sufficient for the care of all service-connected cases; that the expansion of veterans facilities beyond the present capacity is for the benefit of veterans with non-service-connected disabilities. We learn that Congress has made available a little more than $1,000,000,000 to carry forward this expansion program, and that the cost of operating the present veterans hospital facilities in 1948 is $375,000,000.

The medical and hospital benefits are not equally available to all veterans.

There is a growing conflict and competition between the expansion program of the Veterans Administration and the expansion program of the civilian hospitals. There is competition for personnel, for operating funds, materials, etc.

The laws governing the rights of veterans with non-service-connected disabilities were reviewed. As many of you know, the 68th Congress passed an amendment to the World War Veterans Act in 1924. This amendment gave to veterans the right to admission to veterans hospitals for disabilities not due to service. It provided that preference be given to veterans financially unable to pay for hospitalization. This amendment was not sponsored by the American Legion, but by agencies administering veterans affairs. In the first administration of the late President Roosevelt this provision of the World War Veterans Act was repealed by an act "to maintain the credit of the United States Government."

The same Congress, however, passed a law which gave to veterans with non-service-connected disabilities the right to free service in veterans hospitals (Section 706, Chapter 12, Title 38, U. S. Code, 1940 edition).

Under the provisions of this statute veterans have the right to the following benefits under the conditions set forth in the act. The benefits are: (1) necessary hospitalization; (2) necessary transportation to and from the hospital, and (3) medical and surgical care in the hospital.

The following is a statement from the Act:

"The statement under oath of the applicant on such form as may be prescribed by the Administrator of Veterans Affairs shall be accepted as sufficient evidence of inability to defray expenses."

This provision of the Act is enforced by the Administrator of Veterans Affairs by having the veteran sign form P 10 when he makes application for admission to a veterans hospital.

This provision of the law is interpreted by Mr. J. W. Holloway, Director of the Bureau of Legal Medicine and Legislation of the American Medical Association, to mean that the Administrator of Veterans Affairs is compelled to accept without question such a statement by a veteran.

The federal government has by these acts assumed a liability for these medical and hospital benefits to veterans with non-service-connected disabilities on the basis thus defined.

NUMBER OF VETERANS INVOLVED

General Bradley, when Administrator of Veterans Affairs, gave testimony to a Congressional Committee to the effect that approximately 80 per cent of the 18,860,000 veterans can qualify for free medical care, free hospital care and free transportation to and from a hospital.

Your Committee has not at any time subscribed to the methods employed at the present time in determining the ability of the individual veteran to pay the cost of medical and hospital care. We do recognize, however, that any alteration of the methods employed at the present time for determining this question will require an amendment to the law now in effect. We recognize, also, that there is a wide difference of opinion as to the methods by which this question should be determined. We recognize, further, that these differences of opinion, in so far as they are related to veterans, will be resolved finally by an Act of Congress.

The hospital expansion program of the Veterans Administration now going forward and which is sponsored by the American Legion is based on the laws, regulations and estimates above referred to. These are some of the facts that were developed in the first phases of our activity.

The next question naturally to arise was, What action can our committee take which may bring about an alteration in this expansion program?

It was, of course, our purpose to find a solution, if possible, in line with the established policies of this House of Delegates.

ACTIONS BY THE HOUSE OF DELEGATES REVIEWED

Our work at this point was simplified by reference to previous actions by the House of Delegates.

In 1931, this House of Delegates adopted resolutions on this same subject which read as follows:

> *Resolved,* That the House of Delegates of the American Medical Association petition the Congress of the United States and the American Legion to abandon the policy of rendering hospital and medical benefits to veterans of the World War with non-service-connected disabilities, and substitute therefor a plan of disability insurance benefits with the following provisions:
>
> First, the creation of a Bureau of Disability Insurance in the Veterans Bureau as now constituted.
>
> Second, the issuance of a disability insurance policy to each veteran with a disability benefit clause, as follows:
>
> (*a*) The payment of a weekly cash benefit during a period of total disability, and
>
> (*b*) The payment of liberal hospital benefit sufficient to cover the hospital expenses of a veteran during a period of hospitalization for any disability, such benefits to be paid to a veteran on satisfactory proof of total disability, and
>
> (*c*) Such other provisions as are necessary for the proper administration of the act.
>
> Be is further
>
> *Resolved,* That the proper officers of this Association be instructed to approach the officers of the American Legion with the view to securing the adoption of the policy above set out as a part of the legislative program of the American Legion; and be it further
>
> *Resolved,* That each state medical association be requested to form a committee whose duty it will be to approach the state and local Legion Posts throughout the country with a view to securing the adoption of this program by them.

The above resolutions were referred to the Reference Committee on Legislation and Public Relations, which reported as follows:

"Your Reference Committee on Legislation and Public Relations has had under consideration the resolutions offered by

Dr. H. H. Shoulders, Tennessee, pertaining to medical and hospital benefits to veterans of the World War with non-service-connected disabilities. The purpose of these resolutions and the plan advanced therein appeals to this committee as being in line with the heretofore expressed policies of the American Medical Association pertaining to such matters, in addition to which it has the advantage of offering something very definite for the consideration of all parties concerned. It is, therefore, recommended that the resolutions be adopted."

The House of Delegates took the following action on the report of the Reference Committee:

"Doctor Taylor moved that the first section of the report, pertaining to the resolution submitted by Doctor Shoulders relative to the policy of rendering medical and hospital benefits to veterans with non-service-connected disabilities, be adopted. The motion was seconded by Dr. H. B. Everett, Tennessee, and after discussion by Drs. Donald Macrae Jr., Iowa; H. H. Shoulders, Tennessee; H. M. Johnson, Minnesota—who suggested that the report be amended so that the American Hospital Association be invited to cooperate with this committee—J. Norman Henry, Pennsylvania; B. F. Bailey, Nebraska, and Holman Taylor, Texas, this section of the report was amended as suggested by Dr. Johnson and adopted."

Also, in June of this year, this House of Delegates adopted a resolution submitted by the Board of Trustees which reads as follows:

> Whereas, Point seven of the Ten-Point National Health Program of the American Medical Association states: "The veteran shall be entitled to the highest available quality of medical care in accordance with existing law, and preferably in his home community with a physician and hospital of his own choice"; and
>
> Whereas, The Veterans Administration has the authority under certain conditions in service-connected disability and disease to make use of private practitioners and hospitals, thus allowing free choice; and
>
> Whereas, The Veterans Administration is in urgent need of its presently available full time and part time personnel for pension and compensation examinations, for veteran hospital care and for authorization and administrative duties; and
>
> Whereas, Proposed increases in the military services including those added by new draft provisions will tend to reduce the number of physicians available for Veterans Administration personnel; and
>
> Whereas, Hospital care in private hospitals and the additional beds to be provided under the Hill-Burton legislation may limit the building of additional veterans hospitals beyond our present day needs and available personnel; and
>
> Whereas, Numerous veterans in many states have requested the right to make their own choice of physician and hospital in the treatment of their service-connected disability or disease; be it therefore
>
> *Resolved*, That this House of Delegates of the American Medical Association request the Veterans Administration to put into uniform practice a free choice regulation for medical and hospital treatment in service-connected cases; and be it further
>
> *Resolved*, That we urge state medical societies or associations to conform to this principle when making contracts or agreements with the Veterans Administration.

The Committee recognized that it would be not only futile but unjust to seek a repeal of these particular benefits and thus deny a veteran who is unable to pay for medical and hospital care the right to such care.

Then the Committee after much consideration determined on the following policies and procedures:

1. That we supply the Hoover Commission with the facts concerning these several developments and reactions to them that are taking place. This was done.

2. It was decided that we should approach the American Legion with a positive proposal to alter the form of these particular benefits in such a way as to enable veterans to obtain admission to civilian hospitals of their own choice and to obtain the services of physicians of their own choice.

We therefore prepared the following positive proposal and submitted it, together with a lengthy discussion of the subject, to the Medical Advisory Committee of the American Legion in September 1948, as a proposal for their consideration and further discussion:

The Proposal

1. Program of benefits:

(*a*) That the Veterans Administration be authorized by Act of Congress to issue to each veteran who is eligible for hospital service benefits for non-service-connected disabilities under existing laws and to all veterans who may hereafter become eligible for such benefits, a hospital and medical service contract with benefit provisions sufficient for coverage of the cost of *necessary* hospital and medical expenses incurred in rendering such service in a hospital which is approved for service to veterans by the Veterans Administration; or that the Veterans Administration be authorized to purchase such contracts from a nonprofit corporation issuing and administering such contracts.

(*b*) That veterans qualify for such service contract in the manner required at present for admission to a veterans hospital for non-service-connected disability.

(*c*) That the contract cover all disabilities except: (1) service-connected disabilities; (2) chronic illness (in excess of ninety days); (3) disabilities which require only domiciliary care; (4) disabilities which are covered by compensation laws.

(*d*) That veterans with the above named disabilities be eligible for care in veterans hospitals already in existence.

2. The present program of hospital benefits to veterans with non-service-connected disabilities be discontinued in favor of the proposed plan.

We were cordially received, and this committte of the Legion manifested much interest in this proposal and the discussion.

Dr. L. G. Rowntree, Chairman of the Medical Advisory Committee of the American Legion, submitted this proposal to the Rehabilitation Committee of the American Legion during the sessions of the Legion convention in Miami. Again Dr. Rowntree says that much interest was displayed, but that no action would be taken for or against it until the subject had received thorough study.

Two members of the Medical Advisory Committee to the American Legion are also members of the Medical Advisory Council to the Veterans Administration. Dr. C. W. Mayo is chairman of this group, and we understand a joint meeting between the two medical groups has been arranged for December 6 (next week) and the committee of the American Medical Association and the committee of the American Hospital Association have been requested to appear before these groups.

Your committee does not presume to know what the action of the Hoover Commission will be. It is due to report to the Congress in January 1949. Nor do we presume to know what will be the ultimate effects of these efforts on future policies. We do know that the American Legion is one of the largest and most potent organizations in this country and that it is opposed to Communism as much as is the American Medical Association. We know also that it is committed to these medical service benefits to veterans and to the present expansion program of the Veterans Administration. We feel also that if this group can be convinced that the present program is unwise from the point of view of veterans and the point of view of freedom of veterans and that benefits can be made available to veterans in a different form that will preserve the freedom of the veteran and the freedom of the medical profession and at the same time accomplish economies to the taxpayers, it is our belief they will cooperate in such an effort.

In conclusion, we would like to say our association with the representatives of the American Hospital Association has been most pleasant and cordial. Rear Admiral Sutton, Director of Study, Government Hospital Relations, has done a magnificent job in developing vital facts in this matter and is entitled to much credit for the accurate information with which the committee has been supplied.

It is our opinion that this problem is far greater and more far reaching than one realizes at first glance and that it is a major problem before the American Medical Association, the American Legion and the entire population of the United States.

The Committee recognizes that this approach to the question, on the basis of the earlier action of the House of Delegates, involves the acceptance by the Federal Government of responsibility for non-service-connected disabilities of veterans.

The Committee would invite your attention to the fact that the use of the insurance principle, based on our interpretation of previous actions of the House of Delegates, and based on indigency to be determined on a basis yet to be defined in advance of the illness of the veteran, is a basic issue for your consideration. It might be feasible to render these services to the non-service-connected cases entitled to service under plans already in existence in service-connected cases.

Respectfully submitted,

H. H. Bauckus, Chairman.
Elmer Henderson.
H. H. Shoulders.
R. L. Sensenich.
George F. Lull.

The Speaker referred the Supplementary Report of the Board of Trustees to the Reference Committee on Reports of Board of Trustees and Secretary, with the following exceptions: The Supplementary Report of the Council on National Emergency Medical Service was referred to the Reference Committee on Emergency Medical Service and the Report of the Committee on Veterans Affairs, to the Reference Committee on Legislation and Public Relations.

Report of Judicial Council

Dr. E. R. Cunniffe, Chairman, presented the Report of the *Judicial Council* as printed in the Handbook on pages 98-101. The Vice Speaker, who had assumed the Chair, referred the report to the Reference Committee on Reports of Officers.

Report of the Council on Medical Education and Hospitals

Dr. H. G. Weiskotten, Chairman, presented the Report of the Council on Medical Education and Hospitals as printed in the Handbook on pages 102-110 inclusive and a supplementary report on (*a*) Essentials of a Registered Hospital, (*b*) Essentials of an Approved Internship, and (*c*) Essentials of Approved Residencies and Fellowships, copies of the Essentials being distributed to the members of the House, all of which were referred to the Reference Committee on Medical Education by the Speaker, Dr. F. F. Borzell, who had resumed the Chair.

Report of Council on Scientific Assembly

The Chairman referred to the Reference Committee on Sections and Section Work the *Report of the Council on* Scientific Assembly as printed in the Handbook on pages 111-114 inclusive.

Report and Supplementary Report of Council on Medical Service

Dr. James R. McVay, Chairman, presented the Report of the Council on Medical Service as printed in the Handbook, pages 115-128 inclusive, and the following Supplementary Report on the A. M. C. P. (Associated Medical Care Plans) Proposal to Form a National Insurance Company:

Decision up to the House of Delegates: Decision as to whether or not it is desirable to form a national insurance company or a reciprocal enrolling agency to supplement the present prepayment program is now before the House of Delegates for action at this present session. The Council on Medical Service has accomplished the principal purpose of its preliminary report of Oct. 2, 1948, namely, guarding and guaranteeing the right of the House of Delegates to speak for American medicine on this important subject. (A copy of the October 2 report, approved by the Board of Trustees, was sent to each member of the House previous to this meeting.) The right of the House of Delegates to determine its own and medicine's course of action was sustained by representatives of the Council on Medical Service and representatives of various state plans at the A. M. C. P. meeting at French Lick, Ind., in October.

Physicians Should Study Proposal: The second purpose of the October 2 statement of the Council was to make it possible for physicians throughout America to have an opportunity to study thoroughly the proposal for a national insurance company.

Although many state medical associations and county medical societies and groups have considered the insurance proposal and both proponents and opponents have been active in presenting their claims, the medical profession is not yet fully informed in regard to the scope of the proposal. Less than three months ago the printed proposal of the Blue Cross—A. M. C. P. insurance company was distributed to the Blue Cross and Blue Shield plans. The printed proposal was not sent to all state medical associations and county medical societies at that time and, therefore, few state medical organizations have had the opportunity to take action.

An Enrolment Agency Still Should Be Considered: At the June 19 meeting of representatives of state and territorial medical associations, it was evident that more complete agreement could be reached by the profession for the development of a national enrolment agency than for the formation of a national insurance company. The Council reported this fact to the House of Delegates at its Annual Session in Chicago in June 1948.

Sufficient detailed, concrete evidence has not yet been presented; therefore it is not possible to rule out further consideration of an enrolment agency at this time. The Council is of the opinion that an enrolment agency, if it received the wholehearted support of the officers of A. M. C. P., would gain the acclaim of a great majority of physicians and not raise the doubts and cause the repercussions resulting from the present proposal.

Bill of Particulars: Proponents claim a national insurance company is necessary to underwrite large national accounts. In answer to a request for specific information concerning these accounts the Council received the following letter from Dr. Hawley:

> "I have just received a letter from Mr. Frank Van Dyk, Manager of the National Enrollment Division of Blue Cross. When I requested this information from him, I also asked him to send it to you; but, in case he has not, I am furnishing you a summary.
>
> "In the files of the National Enrollment office are recorded 10,955 national employers. We do not believe this list to be complete.
>
> "Within the past two or three years, Blue Cross has competed in the bidding for the coverage of 22 national employers, who have a total of 214,450 employees, without success. These have all chosen commercial insurance instead of nonprofit.
>
> "In the same period Blue Cross has lost 42 accounts of national employers, which they had previously had, and these accounts total 456,800 employees."

A statement from Mr. Van Dyk has not been received and the Council is of the opinion that the data so far supplied are inadequate and hence suggests that the House should receive the answers to the questions set forth in the Bill of Particulars before arriving at a decision. (A copy of the Bill of Particulars is attached, see addenda, number 1.)

Alternate Proposal: The Council suggests that the House give consideration to further study of this entire subject by some impartial group such as the Brookings Institution.

Findings of Council: The Council is making independent inquiries relative to demands for national contracts. (Findings of the Council to date appear in addenda, number 2.)

The Council reminds the House that the Council's promotion of prepayment plans predates the activation of A. M. C. P. A. M. C. P. has been in operation only since December 1946.

The cumulative experience and data pertaining to the individual plans, together with those of A. M. C. P., are not yet sufficient to warrant the inauguration of such an irrevocable step as contemplated in the A. M. C. P. proposal.

The Council is convinced that the primary strength of the voluntary plans lies in their flexibility. The present plans are meeting local needs for which they were developed. This is evidenced by the acceptance of these plans by the public. The Council is further convinced that the A. M. C. P. proposal would have an adverse effect on the autonomy of the local plans.

Political Phase: The whole subject must be considered in the light of two national developments which in a way off-set each other:

(1) The reelection of President Truman with his program for compulsory sickness insurance. According to adherents of the A. M. C. P. plan this strengthens its belief that the creation

of a national insurance company is now obligatory to further the voluntary prepayment movement and thereby offset "socialized medicine."

(2) The proceedings of the Department of Justice against medical organizations in Oregon and California and rumored investigations elsewhere. This should be a warning to those who propose a national insurance company involving the present state medical association and county medical society plans in interstate business, thereby making them vulnerable to government prosecution.

Conclusion: In conclusion the Council points out the fact that in its opinion neither the election results, nor demands by any group, nor the fact that Blue Cross is going ahead with its own insurance company regardless of action by the American Medical Association, has materially changed the fundamental principles and philosophy expressed by the Council in its statement of October 2.

It does believe that whether or not the House decides to approve a national insurance company clarification of the functions and relations of the American Medical Association and the A. M. C. P. is vital to the future progress of the voluntary prepayment movement in America. The Council believes that a definite statement of the House delineating the functions of A. M. C. P. as a trade organization, which it was set up to be, and of the Council as the policy-making body, is essential to a smooth running combination to moment and impel the voluntary prepayment health movement which is so vital in the battle against "socialized medicine." Hence, the Council recommends that the House of Delegates (1) approve the formation of a national enrollment agency and disapprove the proposal for the formation of a national insurance company; (2) approve the statement delineating the field of operation of the Council and A. M. C. P. which was presented to the Board of Trustees in December 1946, and approved by the Board, but not approved by the A. M. C. P. Commission. (Copy is attached, addenda, number 3.); (3) recommend that A. M. C. P. make necessary changes in its constitution and by-laws which would take A. M. C. P. out of the policy-making field, and (4) reaffirm the Council's authority to promote the voluntary prepayment plan program in America.

Respectfully submitted,

James R. McVay, Chairman.
Elmer Hess, Vice Chairman.
Jesse D. Hamer.
J. D. McCarthy.
Thomas A. McGoldrick.
H. B. Mulholland.
R. L. Sensenich.
Walter B. Martin.
Edward L. Bortz.
George F. Lull.
Mr. Thomas A. Hendricks, Secretary.

ADDENDA, NUMBER 1

Bill of Particulars in Regard to National Enrolment

Those who advocate a national Blue Cross–Blue Shield insurance company (Blue Cross–Blue Shield Health Service, Inc.) have made general statements that hundreds of companies and groups demand health coverage on a national, rather than a state or local basis. The Council on Medical Service believes that specific information should be made available to support these general claims.

Proponents for "Proposals for the Blue Cross–Blue Shield Association and Blue Cross–Blue Shield Health Service, Inc." have stated repeatedly that these organizational structures are necessary. They claim they are necessary for two reasons: First, in order to bid successfully for the enrolment of employees of national employers, and second, to conserve and continue to service those national accounts which are now enrolled. National accounts are said "to be those firms which have groups of employees in areas not served by a single plan." This may be an unsatisfactory definition, but nevertheless it is used in the proposals.

There are many medical and nonmedical persons (including some who have had the most extensive and comprehensive experience with prepayment medical care plans) who do not believe the agencies to be created by these proposals are necessary. There are others who believe that a national enrolment agency might be desirable in order to assist in enrolling employees who may reside in areas served by more than one plan. Those in this category state that some enrolling agency, other than an insurance company, could coordinate enrolling and servicing activities and still retain the autonomy of state and local plans. When literally interpreted, these "proposals" are far reaching and constitute great concentration of corporate powers as well as powers to determine professional and other policies.

Before any further efforts are made toward forming either the organizations called for in the proposals or an enrolling agency to which local plans could subscribe on a voluntary basis, it seems that certain information is desirable. Documentary evidence is considered necessary in order to formulate sound planning.

The answers to the following items are minimal in determining a course of action:

1. Names and number of "National Accounts" which now have their employees enrolled in Blue Cross Plans and which will discontinue such enrolment in the absence of the formation of Blue Cross–Blue Shield Health Service, Inc.
2. Number of employees and the number of dependents who will be affected by number 1.
3. Names and number of "National Accounts" which now have their employees enrolled in member A. M. C. P. plans and who will discontinue such enrolment in the absence of the formation of Blue Cross–Blue Shield Health Service, Inc.
4. Number of employees and the number of dependents who will be affected under number 3.
5. Names and number of "National Accounts" which do not now have their employees enrolled in Blue Cross plans but which would enroll their employees if Blue Cross–Blue Shield Health Service, Inc., became operative.
6. Number of employees and number of dependents who would be affected under number 5.
7. Names and number of "National Accounts" which do not now have their employees enrolled in member A. M. C. P. plans but which would enroll their employees if Blue Cross–Blue Shield Health Service, Inc., became an operating insurance company.
8. Number of employees and number of dependents who would be affected by number 7.
9. Number and names of "National Accounts" which demand that all benefits (surgical, medical and/or hospital) for employees shall be uniform regardless of the residence of the employee.
10. Number of employees and number of dependents involved in number 9.

All of the listed items involve primarily the attitudes of employers, since the majority of such coverages are made available to employees by virtue of employer cooperation and in most cases employer contribution toward the costs.

Not so many years ago, the employer (or a committee representing management only) decided what, if any, types of social insurance benefits the employees would be eligible to receive. Management selected the plan or plans, determined the amount to be contributed by the employer and announced the plan or plans and the net costs to the eligible employees. The employees were then free to participate or not participate as they wished.

More recently, many of these employee benefits have become the subject of negotiation between management and labor. Sometimes the negotiations are carried on by a committee representing both labor and management. The labor members of such committees are selected by the employees themselves. In other cases, unions (representing union leaders rather than union members) make specific demands relative to insurance benefits and employer contributions.

In addition to getting specific data on the ten listed items it might be well to attempt to secure similar information with regard to employee and union demands.

SUGGESTED SOURCES

To obtain expressions of the reactions of management and employers, it is suggested that the following agencies be contacted: United States Chamber of Commerce, American Management Association, Industrial Relations Association and the Federation of Employee Benefit Associations. As some of these sources are contacted, it is probable that many other valuable sources may be discovered and explored.

In order to make any undertaking complete, factual data should also be requested from all recognized labor and employee organizations which are interested in the problems under consideration.

ADDENDA, NUMBER 2

FINDINGS OF THE COUNCIL TO DATE

In addition to inquiries directed to A. M. C. P., the Council is exploring other sources of information relative to "National Accounts."

Some of the organizations contacted include the Industrial Relations Association, the United States Chamber of Commerce and certain insurance companies and associations. Time has not permitted a complete or thorough study of all possible sources of information.

To date, replies to inquiries seeking specific data indicate that there is no uniform pattern nor a uniform demand for social insurance benefits.

Some national employers have indicated a desire for uniform social insurance benefits for all employees, regardless of residence, for the following reasons: (1) lower costs; (2) the company transfers many of its personnel from branch to branch, and where uniform coverage is in effect, such benefits are not disturbed, and (3) many company employees and executives travel extensively; these employees and executives know they are entitled to stipulated benefits regardless of where they may be when these benefits are needed.

One large employer indicated that it was company policy to deal with insurance companies rather than Blue Cross. This company established this policy several years ago because the company did not believe in the avowed policy of Blue Cross, i. e., service benefits. This company operates in several areas and the branches are more or less autonomous. The branches are permitted to negotiate their own social insurance programs.

Insurance companies which operate in all states are in a position to underwrite uniform benefits for employees of national employers. Certain information received from one large insurance company indicates that it receives bids from employers to underwrite varying benefits for different employees.

Recently an insurance association chose twenty-five representative business firms to determine the existence of uniformity of benefits pertaining to national accounts. Of these twenty-five firms, twelve companies, employing some 426,000 persons, had nationwide surgical benefit programs. The remaining thirteen firms, employing over 2,160,000 persons, did not have a nationwide surgical benefit program.

A recent publication entitled, "The Experience of 123 Companies Having Employee Benefit Plans," published by the Dartnell Corporation, also indicates a lack of uniformity of benefits among the corporations included in that study.

The Council on Medical Service has received numerous letters and telegrams stating opposition to the Blue Cross–A. M. C. P. proposal for a national insurance company. In addition, the Council has received copies of resolutions from several county and state medical societies expressing disapproval of the proposal. Some resolutions have approved the October 2 statement of the Council and the Board of Trustees. Other resolutions have urged serious consideration of the proposal by the House of Delegates of the American Medical Association before any action is taken. One resolution encouraged "the formation of a National Agency for Voluntary Health Service Plans"; but did not approve the specific proposal under consideration. There is a wide difference between the total enrolment of most Blue Cross plans and the total enrolment of coordinated prepayment medical care plans.

In the aggregate, Blue Cross enrolment exceeded coordinated prepayment medical care plan enrolment by approximately 18,000,000 on June 30, 1948.

ADDENDA, NUMBER 3

RECOMMENDATIONS OF THE COUNCIL ON MEDICAL SERVICE WITH REGARD TO A. M. C. P.

The A. M. C. P.: An organization of the plans themselves, primarily interested in the internal problems of organization and administration.

Its function might well be to assist plan managers in specific problems concerned with the details of actual plan operation and cooperation with the Council in the over-all program.

Some of the subjects and problems with which A. M. C. P. should be primarily concerned are: (1) physical set-up of plan offices and service equipment; (2) personnel set-up of plans; (3) standardization of methods or systems of keeping actuarial data on plan experience; (4) standardization of forms used by plans; (5) uniformity of contracts and provisions for reciprocity among plans, and (6) methods and mediums to be employed in selling, etc.

The Council: The Council should assume the major role of promoter, director and coordinator on a nationwide basis.

Promotion includes: (1) urging all areas through the state and county medical societies to make some sort of adequate program of prepayment available to the public; (2) providing consultation and field service to the state and county medical societies, including A. M. C. P. in this field service where needed; (3) assisting the state and county medical societies in educating the doctors (and the public) to the need for prepayment programs; (4) providing publishable data and information on all of the plans to state and county medical societies, to national publications, groups and conferences and to American Medical Association publications, and (5) striving for a basis of cooperation among all voluntary agencies.

Direction includes: (1) over-all studies on growth, specific contract provisions (x-ray etc.), enrolment practices and other items in which over-all suggestions and exchanges of ideas might be applicable; (2) setting of standards for plans and issuing the "Seal of Acceptance," including nationwide recognition of the Seal as the emblem of doctor-sponsored medical care plans, and (3) studying other programs of medical service, including indigent care, contract practice, cooperatives, etc., to evaluate them and to determine their place, if any, in the American Medical Association medical care program.

Coordination includes: (1) providing a clearing house for ideas and data, including central file on factual information, and (2) assisting A. M. C. P. in selling its recommendations to the doctors and the plans.

Approved by the Board of Trustees December 1946.

The Speaker referred the Report of the Council as printed on pages 115 to 118 of the Handbook referring to community leadership, regional conferences, News Letter and special projects, and as printed on pages 126 to 128 inclusive dealing with the Washington Office, to the Reference Committee on Legislation and Public Relations. The balance of the report of the Council as printed in the Handbook and the supplementary report were referred to the Reference Committee on Medical Service and Prepayment Insurance Plans.

Supplementary Report of Council on Scientific Assembly

Dr. Henry R. Viets, Chairman, presented the following Supplementary Report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work, together with the report of the Council as printed on pages 111 to 114 inclusive of the Handbook:

Allocation of Section Meetings at the 1949 Annual Session: Further consideration of the problem of allocating units to sections for the 1949 Annual Session in Atlantic City was discussed at a meeting of the Council held in St. Louis, Nov. 30, 1948. At the Annual Conference of Section Secretaries on Nov. 13, 1948, the Council was impressed by the quality of the programs submitted by the section secretaries and, in some instances, particularly in those situations where units for joint sessions were requested, the Council felt that additional units to those already assigned were justified and so ordered.

Having in mind that the goal aimed at by its decision to restrict some sections to two units had been attained at least partly by the demonstrated increased interest in developing vital programs on the part of the section secretaries, the Council was glad to accede to the wishes of the secretaries as far as practicable. An essential part of the function of the Council is to gage the temper of section work and to change rulings promptly to conform with new situations. Thus, a reallocation of section units, based on current reports, is quite in accord with the thinking of the Council. Indeed, the Council hopes to keep in such close touch with section work and the problems faced by section secretaries as to be ready at all times to mold its decisions to fit the immediate situation. At Atlantic City room can be found for all section meetings in adequate quarters. In other cities the problem may be harder to meet in an entirely satisfactory manner and the allotment of units will of necessity be guided in part by the availability of rooms, even though the program under consideration by a section secretary be one of outstanding merit.

Enlargement of the Council: The Council on Scientific Assembly as now constituted consists of five Member or Service Fellows elected by the House of Delegates on nomination by the Board of Trustees (By-Laws, Division Three, Chapter X, Sec. 4. Standing Committees.—[B] Membership). Due to the increasing amount of work devolving on the Council by virtue of an additional Scientific Assembly at the Interim Sessions and because of the enlarged scope of the activities of the Council under the new By-Laws, a request is made to the House of Delegates to give consideration to enlarging the membership of the Council from five to seven. The Council also suggests, if the request for enlargement be granted, that, when feasible, one of the additional members be a general practitioner or a Fellow who has intimate knowledge of the needs of general practitioners in relation to arranging the programs for the Scientific Assembly at the Annual Sessions and at the Interim Sessions.

Respectifully submitted,

HENRY R. VIETS, Chairman.
CHARLES H. PHIFER.
L. W. LARSON.
STANLEY P. REIMANN.
ALPHONSE MCMAHON.
ERNEST E. IRONS, President-Elect.
MORRIS FISHBEIN, Editor, THE JOURNAL. } Ex officio.
GEORGE F. LULL, Secretary.
ERNEST B. HOWARD, Assistant Secretary.

Motion to Recess

Dr. Philip W. Morgan, Chairman, Reference Committee on Rules and Order of Business, moved that the House recess at 12:30 p. m. to reconvene at 2 p. m. The motion was regularly seconded and carried.

NEW BUSINESS

Statement of Policy of American Medical Association

Dr. E. Vincent Askey, California, presented the following statement, which was referred to the Reference Committee on Medical Service and Prepayment Insurance Plans:

The American Medical Association reaffirms its belief in the application of the principle of medical care insurance on a voluntary basis. The American Medical Association has encouraged and assisted the development of voluntary prepayment plans. Coverage is now provided throughout the country and protection is being extended rapidly to an ever increasing proportion of our population.

The American people now enjoy the highest level of health, the finest standards of scientific medical care and the best quality of medical institutions thus far achieved by any major country of the world.

The great accomplishments of American medicine are the result of development by a free profession working under a free system, unhampered by governmental control.

The experience of all countries where government has seized control of medical care has been progressive deterioration of the standards of that care to the serious detriment of the sick and needy.

The American medical profession is unalterably opposed to the institution of any system of medical care which would result in damage to the American public. Our carefully considered opinion is that any scheme of political medicine would be a catastrophe for the American people.

Compulsory sickness insurance, notwithstanding misleading bureaucratic propaganda, is a variety of socialized medicine or state medicine and possesses the evils inherent in any politically controlled system. It is contrary to American tradition, and is the first and most dangerous step in the direction of complete state socialism. The American Medical Association rejects any such scheme as a method of the distribution of medical care. We are equally certain that when the people understand the facts they also will reject it with the same finality.

On the basis of experience, we are convinced that voluntary medical care insurance, with the continued support of the American medical profession, can and will solve the economic problem of the distribution of medical care within the existing framework of private enterprise.

It has been demonstrated that the voluntary method provides a better and less costly service and avoids the imposition of enormous taxation.

The continuing purpose and determination of the American Medical Association is to maintain and improve the standards of medical care and to make that care available to all our people.

Resolutions on Diabetes Week and Efforts in Behalf of the Undiscovered and Untreated Diabetic Patient

Dr. Walter G. Phippen, Massachusetts, presented by title resolutions dealing with diabetes, which were referred to the Reference Committee on Hygiene and Public Health.

Resolutions on Citation to Distinguished Layman

Dr. Walter E. Vest, West Virginia, presented the following resolutions:

WHEREAS, The Interim Session of the House of Delegates of the American Medical Association convened in St. Louis, Mo., presents an unusual opportunity for the recognition of service to the public and to American medicine rendered by a distinguished and nationally known layman; therefore be it

Resolved, That the House of Delegates of the American Medical Association award to Rev. Alphonse M. Schwitalla, S. J., Dean of the Medical School of St. Louis University, a certificate of appreciation and a gold medal emblematic of outstanding effort for the public welfare on a national level; and be it further

Resolved, That the award be made during this session at a time to be specified by the Speaker of the House of Delegates.

Dr. John W. Cline, California, moved that the resolutions be acted on immediately without reference to a committee. The motion was seconded by Dr. Mather Pfeiffenberger, Illinois, and carried and the resolutions were adopted.

Resolutions on Support of Diabetes Week

Dr. F. S. Crockett, Indiana, presented by title Resolutions on Support of Diabetes Week, which were referred to the Reference Committee on Hygiene and Public Health.

Resolutions on Compulsory Hospital Staff Attendance

Dr. F. S. Crockett, Indiana, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The welfare of the medical profession, its general scientific advancement and the furtherance of public interest are paramount in the affairs of the Indiana State Medical Association; and

WHEREAS, The welfare of the profession and the public is placed in jeopardy by the continuing demand on the time of physicians for their compulsory attendance at medical meetings; and

WHEREAS, Physicians are unable to find the hours to attend the constantly growing number of medical meetings and, at the same time, minister to the health needs of their patients; therefore be it

Resolved, That the house of delegates of the Indiana State Medical Association go on record as requesting that the American Medical Association no longer give its actual or implied approval of organizations which demand compulsory attendance at medical meetings; and be it further

Resolved, That the delegates of the Indiana State Medical Association to the American Medical Association be instructed to present this resolution to the House of Delegates of the American Medical Association at the next meeting of that body.

On motion of Dr. Mather Pfeiffenberger, Illinois, duly carried, the House recessed at 12:30 p. m. to reconvene at 2 p. m.

Tuesday Afternoon

The House reconvened at 2 p. m., with the Speaker, Dr. F. F. Borzell, presiding.

Change in Reference

The definition of the term "public health" in the Report of the Council on Medical Service, which had been referred to the Reference Committee on Medical Service and Prepayment Insurance Plans, was now taken from that committee and referred to the Reference Committee on Hygiene and Public Health.

NEW BUSINESS

Proposed Amendment to By-Laws Division Three, Chapter IX, Sec. 3 (C)

Dr. William Bates, Pennsylvania, presented the following proposed amendment to Division Three, Chapter IX, Sec. 3 (C) of the By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Division Three, Chapter IX, Sec. 3 (C) reads at present: "Executive Sessions.—The House of Delegates may convene in executive session at any time on a majority vote of its members. Only members of the House of Delegates as defined in Article 6, Section 2, of the Constitution shall be present at an executive session. The House, by a two-thirds majority vote, may invite any other person who in its judgment might assist in the deliberations."

It is suggested that Sec. 3 (C), Chapter IX, Division Three be amended to read:

"(3). Open, Closed or Executive Sessions.—Sessions of the House may be (1) Open, (2) Closed, or (3) Executive. (1) The House of Delegates may meet in open session to which any person may be admitted. By majority vote of the seated delegates, an open session may be moved into either a closed or an executive session. (2) A closed session shall be restricted to Fellows and members of this Association, and to attachés of this Association, of constitutent state medical associations and of component county medical societies. (3) An executive session shall be limited to the members of the House of Delegates as defined in Article 6, Section 2, of the Constitution and to such administrative employees of this Association and of the House of Delegates necessary for the functioning of the House. (4) The House of Delegates in any session by unanimous consent, may extend an invitation to address the House to any individual who in its judgment might assist in the deliberation."

Resolution on Federal Subsidization of Medical Education

Dr. Samuel J. McClendon, California, introduced by title a Resolution on Federal Subsidization of Medical Education, which was referred to the Reference Committee on Executive Session for determination of its disposition.

Resolutions on Voluntary Participation in Any Form of Compulsory Governmental Medical Insurance

Dr. Samuel J. McClendon, California, presented by title Resolutions on Voluntary Participation in any form of Compulsory Governmental Medical Insurance, which were referred to the Reference Committee on Executive Session.

Resolutions on Medical Service Plans

Dr. Thomas K. Lewis, New Jersey, submitted by title only Resolutions on Medical Service Plans, which were referred to the Reference Committee on Executive Session.

Resolution on Executive Session

Dr. H. B. Goodrich, Missouri, presented by title a Resolution on Executive Session, suggesting an amendment to the By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Resolution on Presentation of Facts Concerning Health Care to Members of Congress

Dr. C. R. Rountree, for the Oklahoma delegation, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, There has been for several years a constantly growing threat to the voluntary method of rendering medical care to the people of the United States, and,

Whereas, The significance of that threat has been greatly increased by the issuance of "The Nation's Health," a report to the President of the United States by Oscar R. Ewing, Federal Security Administrator; and

Whereas, The recommendations of the Ewing Report have been recommended to the people of the United States by leaders in government and Congress; and

Whereas, There is an ever increasing sentiment among certain pressure groups throughout the nation favoring governmental interference and control in the health field; and

Whereas, An effort to combat all the above influences will require the closest cooperation and coordination by the American Medical Association and its constituent state medical associations and societies; and

Whereas, If the complete facts concerning compulsory health insurance are to be properly presented to the Congress of the United States, it is believed that such presentations must, to be the most effective, be given to the Senators and Representatives by conferees from their own states; now, therefore, be it

Resolved, That the Board of Trustees request each state medical association and society to make known to the Secretary and General Manager of the American Medical Association the names of at least five members of the respective state medical associations and societies who have intimate knowledge and experience concerning the programs of the American Medical Association for the extension of medical care, and who can be depended on to present the facts concerning health care to their respective state delegations in Congress, these representatives to be available on call for any and all types of consultations.

Resolutions on Proposed Veterans Hospital Near Ann Arbor, Mich.

Dr. L. G. Christian, Michigan, presented by title Resolutions on Proposed Veterans Hospital near Ann Arbor, Mich., which were referred to the Reference Committee on Executive Session.

Resolutions on Compulsory Health Insurance

Dr. L. G. Christian, Michigan, submitted by title Resolutions on Compulsory Health Insurance which were referred to the Reference Committee on Executive Session.

Resolution on Supplying Doctors for the Armed Forces

Dr. David B. Allman, New Jersey, presented the following resolution, which was referred to the Reference Committee on Medical Education:

Whereas, The American Medical Association recognizes that there is a serious deficit of medical officers to meet the anticipated needs of the armed forces, and that there appears to be no prospect, under present methods, of overcoming this deficit; and

Whereas, the American Medical Association recognizes its responsibility to aid the government in obtaining a sufficient complement of young physicians and qualified specialists for the armed forces; therefore be it

Resolved, That the American Medical Association suggest that the National Security Resources Board be given adequate statutory authority to meet the requirements of the armed forces for medical personnel under a plan embodying the following principles: (1) deferment of recent graduates until completion of an internship not to exceed two years; (2) deferment of medical students to complete their medical education and an internship, the latter not to exceed two years; (3) obligation of the physicians constituting both the above groups, at completion of internship to accept one year of service in the armed forces regardless of their attained age at completion of internship; (4) acquisition of the needed complement of specialists and other especially qualified physicians on a contract basis without regard to age limitations and on a salary sufficient to attract such personnel, and (5) institution of a survey of the personnel of medical teaching institutions to the end that each institution release one or more of its staff for a period of at least one year for service with the armed forces.

Resolutions on Gathering and Dissemination of Information Relative to Health Legislation

Dr. Clark Bailey, for the delegates from Kentucky, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

Whereas, The private practice of medicine and thereby the entire structure of free enterprise and the American way of life is in imminent danger; and

Whereas, There is a need for urgent action and a lack of sufficient time to counteract this threat without a central authority with power of official action; and

Whereas, There is a need for a central agency to express the views of the medical profession concerning actual and proposed federal legislation relating to public health and medical care; and

Whereas, There is an urgent need for a central agency to inform and coordinate as well as stimulate action by the medical profession and all other groups interested in preserving free enterprise and the American way of life; now therefore be it

Resolved, By the House of Delegates that the Board of Trustees of the American Medical Association be hereby authorized to take whatever action it may deem necessary to establish a central committee or agency of the American Medical Association to study all actual and proposed federal legislation concerning public health and medical care in the United States and to express the official opinion of the American Medical Association concerning such legislation; and be it further

Resolved, That the Board of Trustees of the American Medical Association be instructed to establish a committee to review at frequent intervals all proposals of national health legislation and all other material pertinent to the welfare of the medical profession and the people it serves, and to furnish to each constituent state association a sufficient digest of such material with the urgent request that a committee be established in each state association to disseminate such material to each of its members, thus insuring complete enlightenment of every doctor in these United States of America of the menace to their profession.

Resolutions on a Public Relations Program

Dr. Robertson Ward, representing many states, presented the following resolutions which were referred to the Reference Committee on Executive Session to determine their disposition:

Resolved, That this House of Delegates instruct the Board of Trustees to implement a "Statement of Policy" as adopted by the House at this session; and be it

Resolved, That the House of Delegates declare that the Board of Trustees of the American Medical Association has its complete confidence in its intention and ability to carry out the objectives and execute the mandates of the House of Delegates; and be it further

Resolved, That, since necessary funds must be provided in order to execute an effective program now, the dues for this year be set at twenty-five dollars ($25) per member; and be it further

Resolved, That this House of Delegates hereby directs the immediate expansion of the Washington office and its placement directly under the supervision, direction and control of the Board of Trustees; and be it further

Resolved, That we recommend the immediate employment of suitable public relations counsel to assist in the execution of this program; and be it further

Resolved, That in order to coordinate the activities of the public relations phase of this program at all levels the public relations counsel shall disseminate information to (*a*) the general public, (*b*) the Congress of the United States and (*c*) state and county medical societies and individual physicians; and be it further

Resolved, That it be the unanimous expression of the medical profession, as represented by the House of Delegates, that we are firmly united behind the positive and constructive program as outlined by the House of Delegates; that we are confident in the ability of our leadership; that we are determined to protect and foster the high standards of medical care for the public; that we are steadfastly opposed to the regimentation and socialization of American medicine, and that we are confident that an intelligent and informed public will join us in our crusade to ever improve the health and welfare of the American people.

Resolution on National Publicity

Dr. William H. Halley, on behalf of delegates from several states, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, The people of the United States rightfully look to the American Medical Association for leadership in all matters affecting the health of this nation; and

Whereas, Much erroneous information has been given to the public on the subject of standards, costs and distribution of medical care and it has become imperative that this widespread false propaganda favoring governmental management of medical practice be immediately contradicted by factual information disseminated to all citizens of this country; therefore be it

Resolved, By the House of Delegates that the American Medical Association, through its Board of Trustees, forthwith undertake the preparation of a dignified and wholly factual national publicity and advertising campaign to accomplish this purpose, the campaign to be presented simultaneously and uniformly in both the national periodical press and, by distribution to the constituent state associations and component county societies, in the newspapers of the entire United States.

Resolutions on National Health Insurance

Dr. T. K. Gruber, Michigan, presented the following resolutions, which were referred to the Reference Committee on Medical Service and Prepayment Insurance Plans:

Whereas, There are continuing demands for National Health Insurance by one of the major political parties of our country, and a modified form of the same has already been urged by powerful elements in the other major political party, so we must conclude that the danger that some such legislation will be passed by Congress is very real; and

Whereas, The doctors of the State of Michigan believe that a successful voluntary prepayment plan for medical care is a most constructive effort to improve human relations and safeguard the public health in a democratic manner; and

Whereas, The doctors are fully aware that to oppose compulsory health insurance by voluntary prepayment plans these plans must be available and enthusiastically supported by all the states in the unified effort (which is far from the fact) and that this effort can only be made at the national level; and

Whereas, The seventy odd medical care plans listed by the Council on Medical Service of the American Medical Association represent worthy efforts in certain parts of the country, at the city, county and state level, and yet as a whole they lack strength because their individual fields are too narrow and, lacking coordination, they do not meet the national need; and

Whereas, Dr. Paul Hawley, head of the Blue Shield and Blue Cross Commission, a man whose driving energy in both war and peace has been proved, and who now has suggested a National Service Agency for securing a coordination of effort and uniformity of detail in these seventy odd plans which will serve greatly to strengthen their position and reasonably answer some of the criticism directed against the voluntary insurance system; therefore be it

Resolved, That this House of Delegates of the Michigan State Medical Society advise the Board of Directors of Michigan Medical Service to encourage and proceed to the formation of a National Agency for Voluntary Health Service Plans, keeping in mind the best interests of the doctors of medicine and of the people of the State of Michigan; and be it further

Resolved, That the Michigan delegates to the American Medical Association be instructed to present a resolution to the House of Delegates of that Association, urging the American Medical Association to exert its support and encouragement to extend Voluntary Health Service Plans in areas not now served and the inclusion of such plans into a National Agency.

Resolutions on Selective Service

Dr. H. P. Ramsey, District of Columbia, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

Whereas, The traditional position of the American medical profession has been to serve local draft boards without compensation; and

Whereas, The House of Delegates in June 1948 adopted a resolution calling for compensation for this service; and

Whereas, The Selective Service System has ample assurance from American physicians that they will continue to serve without fees; and

Whereas, Procedures established under the authority of the Selective Service Act of 1948 require fewer examinations than under the previous acts; and

Whereas, The continuance of the aforesaid resolution puts the physician in an unfavorable light which is not truly expressive of his feelings; therefore be it

Resolved, That the House reconsider the Resolutions on Paying Physicians Engaged in Examination for Armed Forces referred to above; and be it further

Resolved, That the action of June 23, 1948 on those resolutions be rescinded.

Resolutions on Health Units for the Nation

Dr. H. P. Ramsey, District of Columbia, presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

Whereas, No amount of medical care of persons already sick will seriously reduce the incidence of illness; and

Whereas, The traditional position of the American Medical Association has been one of firm support of preventive public health services; in fact, this constitutes part 2 of the 10 point health program of the American Medical Association; and

Whereas, Large numbers of local areas and counties in the United States are not now and never have been covered by adequate sanitary and preventive services; and

Whereas, The Surgeon General of the United States Public Health Service has announced that one of his first major objectives is assistance in development of local health units throughout the nation to meet this fundamental need; and

Whereas, The medical profession has now an opportunity to exert constructive leadership in this matter; therefore be it

Resolved, That the House of Delegates reaffirm its abiding interest in the necessity for the provision of adequate public health preventive services at the local and community level, including sanitation and all the services usually considered essential for the preservation of the public health; and be it further

Resolved, That the Surgeon General of the United States Public Health Service be commended for, and encouraged in, his efforts for the further development of local health units for these purposes; and be it further

Resolved, That the Board of Trustees be instructed to pursue actively all proper procedures to the end that local public health service shall become adequate throughout the nation.

Resolution on Accident Prevention

Dr. H. P. Ramsey, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Industrial Health:

Whereas, The American Medical Association has in the past cooperated with the National Safety Council in its efforts to reduce the incidence of deaths and injuries from accidental causes; and

Whereas, The studies that have been made by the Bureau of Medical Economic Research of the American Medical Association have established the fact that fatal accidents cut off more years from the working lifetime of the American people than any one natural cause of death; and

Whereas, In the recent report made to the President by the administrator of the Federal Security Agency, it was stated that 40,000 deaths annually from accidents were preventable; therefore be it

Resolved, That the Board of Trustees be instructed to cooperate in every possible way with the National Safety Council and with every other agency, both public and private, concerned with accident prevention, to the end that research in accident prevention be further stimulated; that this excessive drain on hospital and medical facilities be lessened, and that the appalling loss of working years be reduced.

Resolutions on Reorganization of Council on Medical Service

Dr. J. Morrison Hutcheson, Virginia, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

Whereas, The By-Laws of the American Medical Association enumerate the functions of the Council on Medical Service as follows:

(*a*) To make available facts, data and opinions with respect to timely and adequate rendition of medical care to the American people;

(*b*) To inform constituent associations and component societies of proposed changes affecting medical care in the nation;

(*c*) To inform constituent associations and component societies regarding the activities of the Council;

(*d*) To investigate matters pertaining to the economic and social aspects of medical care;

(*e*) To study and suggest means for the distribution of medical service to the public consistent with the principles adopted by the House of Delegates, and

(*f*) To develop and assist committees on medical service originating from constituent associations and component societies of the American Medical Association; and

Whereas, The Council on Medical Service, at the time of its creation in 1943, met and devised its own rules of operation in accord with Chapter X, Section 4, paragraph E of the By-Laws of the Association; and

Whereas, These rules of operation, while adequate for the Council's first few years of operation, should now be amplified to allow the Council to carry out its functions efficiently and with promptness; and

Whereas, Chapter X, Section 4, paragraph F of the Association's By-Laws provides that "each Council shall have authority to appoint committees subject to the approval of the Board of Trustees for any purpose within the functions of the Council"; and

Whereas, From time to time the study and direction of certain phases of medical care have been assigned to special committees; and

Whereas, It is clear that a coordinated plan for the medical care of the American people should be developed and directed through a single channel; and

Whereas, In the interest of efficiency and economy it seems desirable to coordinate the activities that relate to medical care under the Council on Medical Service; therefore be it

Resolved, That the present problems of medical care be divided into the following divisions, each of which can be solved only when considered with each of the others and integrated in a community basis: (*a*) prepayment hospital and medical service; (*b*) extension of hospitals and other facilities; (*c*) medical care of veterans; (*d*) medical care of industrial workers; (*e*) medical care of the indigent; (*f*) medical care of children, and (*g*) cooperatives; and be it

Resolved, That in order to implement this plan the Council be authorized to set up committees under the Council to study each of these problems; and be it

Resolved, That a member of the Council serve as a member of each of these committees and that the activities of the committees be coordinated by the Council as a whole; and be it

Resolved, That the Council be authorized to select the members of these committees so as to represent various areas of the United States or particular interests involved in the committees' work; and be it

Resolved, That the Council be authorized to empower these committees to assist the Council in much of its detailed work, thus leaving the Council as a whole free to devote more of its attention to broad problems of policy; and be it

Resolved, That the existing committees now dealing with subdivisions *a, b, c, d, e, f* and *g* in the first resolved in the body of these resolutions be dissolved and reconstituted under the Council on Medical Service.

Resolution on Executive Sessions

Dr. W. A. Coventry, Minnesota, presented the following resolution, which was referred to the Reference Committee on Executive Session:

Resolved, That Division Three, Chapter IX, Sec. 3 (C) of the By-Laws, relating to those that may be in attendance at executive sessions of the House of Delegates, be amended so that this paragraph, as amended, would read

(C) EXECUTIVE SESSIONS.—The House of Delegates may convene in executive session at any time on a majority vote of its members. Only members of the House of Delegates as defined in Article 6, Section 2, of the Constitution, *and Presidents, Presidents-Elect, and Chairmen of Councils and Secretaries of state medical societies* shall be present at an executive session. The House, by a two thirds majority vote, may invite any other person who in its judgment might assist in the deliberations.

Resolution on Increase in Number of Students Graduated at Medical Schools in Michigan

Dr. Wyman D. Barrett, Michigan, presented the following resolution, which was referred to the Reference Committee on Medical Education:

Whereas, There is general agreement as to the need for a larger number of physicians; and

Whereas, The facilities for teaching are not sufficiently increased to provide hope in the near future of answering the need for a larger number of physicians; and

Whereas, The number of persons other than Doctors of Medicine licensed to practice the healing art in the State of Michigan has increased materially; therefore be it

Resolved, That the Michigan State Medical Society, through its officers, support any reasonable means to increase the number of students graduated from medical schools in this state, and that the delegates to the American Medical Association take similar action at the next meeting of the House of Delegates of the American Medical Association.

Resolutions on Favoring Enactment of Legislation on Establishment of Medical Advisor

Dr. James C. Sargent, Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Emergency Medical Service:

Whereas, It is the opinion of the Council on National Emergency Medical Service that the present position of the Surgeon General of the Army and the Medical Department as set forth in Circular 342, paragraph 12 b, dated November 1948, Department of the Army, in the *organizational structure of the Army, is unsatisfactory and detrimental to* the health and medical activities of the Department of the Army; and

Whereas, This Circular specifically states that the Director of Logistics, a layman, "directs and controls the operations and administrative activities of the heads of the technical services," which means that a layman untrained in any type of medical care is directing the professional medical program of the Department of the Army; and

Whereas, The establishment of such a mechanistic type of administration cannot provide adequate, scientific and professional medical service for the Army; therefore be it

Resolved, That the Council recommend to the Board of Trustees and to the House of Delegates that the American Medical Association go on record in favor of the enactment of legislation to establish the Surgeon General of the Army as Medical Advisor to the Secretary *of the Army and to the Chief of Staff of the Army, and that the Surgeon General of the Army* be *empowered to exercise management* control, professional control and technical control in all medical and health matters throughout all levels of command within the Department of the Army. To accomplish this, the Surgeon General of the Army must have direct and unobstructed access at all times to the Secretary of the Army and to the Chief of Staff of the Army. Only by such legislative action can the health and high standards of medical and professional care be maintained in the Department of the Army; be it further

Resolved, That this recommendation be forwarded by the Secretary of the American Medical Association to the President of the United States, to the Secretary of Defense and to the Chairmen of the Armed Services Committees of the Senate and House of Representatives, and that an informative copy be sent to the Secretary of the Army.

Resolutions on Position of Surgeons General

Dr. James C. Sargent, Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Emergency Medical Service:

Whereas, The chief medical officers of the Army, Navy and Air Force have a great responsibility in connection with the prevention as well as the treatment of diseases and injuries in members of the armed forces, and the modern unconventional weapons of war have serious medical and health implications both in defense and offense; and

Whereas, The effective execution of the medical mission in peace as well as in war demands that the chief medical officer in the three respective services have a voice in the planning and other activities affecting the health and the treatment of the sick and injured; therefore be it

Resolved, That in peace as well as in time of war the Surgeon General of the Army, the Surgeon General of the Navy and the Air Surgeon be so placed in the respective organizational set-up of the Army, the Navy and the Air Force that he is directly under the Chief of Staff of the Army, the Chief of Naval Operations or the Chief of the Air Staff, as the case may be; be *it further*

Resolved, That these chief medical officers have the responsiblity directly under the Chief of Staff of the Army, the Chief of Naval Operations and the Chief of the Air Staff in all matters pertaining to health, hospitalization, evacuation and sanitation in their respective services; be it further

Resolved, That a copy of these resolutions be sent to the President of the United States, the Secretaries of National Defense, Army, Navy and Air and the members of the Committee on Armed Forces of both the Senate and the House of Representatives.

Resolutions on Interns

Dr. Joseph F. Londrigan, New Jersey, presented by title Resolutions on Interns, which were referred to the Reference Committee on Medical Education.

Change in Reference

The Speaker, with the permission of the House, withdrew from the Reference Committee on Executive Session the Resolution on Executive Sessions introduced by Dr. W. A. Coventry, Minnesota, and referred it to the Reference Committee on Amendments to the Constitution and By-Laws.

Supplementary Report of Board of Trustees

REPORT OF LIAISON COMMITTEE TO CONSIDER RED CROSS BLOOD BANK PROGRAM

Dr. E. L. Henderson, Chairman, requested Dr. L. W. Larson, Chairman of the Liaison Committee to Consider Red Cross Blood Bank Program, to present the report of that committee, as follows, which was referred to the Reference Committee on Miscellaneous Business:

Unfortunately, Dr. A. S. Giordano, Chairman of the Committee on Liaison with the Red Cross Blood Program, was forced to resign because of ill health. Insufficient time remained after his successor was chosen and the four new members authorized by the House of Delegates last June were appointed, for the committee to meet prior to November 29.

Your attention is directed to the report of the committee, as published in the May 8, 1948, issue of The Journal, which states: "The need for blood procurement falls into three general categories: (1) local procurement for local continuing needs; (2) procurement for disaster relief in peacetime, and (3) procurement for single or multiple wartime disaster." The committee believes that, as never before in peacetime, it is our solemn duty to encourage the development of, and participate in, a plan which will insure an adequate supply of blood, and blood derivatives, in the event our country is suddenly, and possibly without warning, plunged into another world war. The committee is convinced that because of its pattern of nationwide organization and its experience and record in the procurement and processing of blood during the last world war, the Red Cross is the logical agency to assume this responsibility.

Sixteen Red Cross Blood Centers are in operation at the present time. They are located in: Massachusetts (State Program); Washington, D. C.; Atlanta, Ga.; St. Louis; Wichita, Kan.; Tucson, Ariz.; San Jose, Calif.; Great Falls, Mont.; Rochester, N. Y.; Charlotte, N. C.; Detroit; Springfield, Mo.; Omaha, Neb.; Stockton, Calif.; Los Angeles, and Yakima, Wash.

A center at Columbus, Ohio, is to open Dec. 7, 1948. Nine centers are expected to begin operation during the winter months. They will be located in: Norfolk, Va.; Asheville, N. C.; Nashville, Tenn.; Mobile, Ala.; Louisville, Ky.; Lansing, Mich.; St. Paul; Boise, Idaho, and Portland, Ore.

In addition, eight centers located in New Haven, Conn.; Syracuse, N. Y.; Philadelphia; Johnstown, Pa.; Baltimore; Wilkes-Barre, Pa.; Savannah, Ga., and Madison, Wis., are in the preliminary stages of development. They are expected to open before July 1, 1949. Therefore it is contemplated that a total of thirty-four Red Cross Regional Blood Centers will be in operation by June 30, 1949.

No formal complaints have been submitted to the committee since last June. The House of Delegates, in Chicago, defined its "Approval in Principle" of the Red Cross Blood Program as follows:

"First, local control must be by the county medical society.

"Second, the local medical society should be the contact in the initial contemplation of inauguration of a new blood bank.

"Third, no publicity or news releases shall be released except by mutual consent of the local county medical society and the local chapter of the American Red Cross.

"Fourth, difference of opinion in establishment or operation of a blood bank in either administrative or technical detail shall be arbitrated at state levels by joint committees from the state medical society and the American Red Cross."

The committee believes the American Red Cross is sincere in its acceptance of these principles, and that the recent "Statement of Policy" as contained in the agreement between the Multnomah Medical Society, Portland, Ore., and the American Red Cross justifies this confidence. The Portland agreement conforms to the first, third and fourth points in the definition of "Approval in Principle" referred to. Its contents, a copy of which is appended to this report, should be studied carefully by those county medical societies which are in the process of developing a Red Cross Blood Center or contemplate doing so.

Officials of the American Red Cross have assured the committee that they will respect point 2 of the "Approval in Principle," which states: "The local medical society should be the contact in the initial contemplation of inauguration of a new blood bank." As evidence of their willingness to do so, they have submitted a copy to each member of the committee of their "Chapter Administrative Manual—National Blood Program," which contains the following statement:

"Initial contacts must be made with each of the communities in the contemplated regional program to determine the need for blood in the region. These contacts should be made jointly by representatives of the county medical society and the Chapter, assisted, if desirable, by members of the area office staff."

The committee has reason to believe that this directive is being respected by regional and state representatives of the American Red Cross.

The policy of the American Red Cross prevents it from making a charge for the blood and its derivatives, which it supplies to physicians and to hospitals through its Regional Blood Centers. The Chapter Administrative Manual contains the following statement:

"The only charges to the recipient are those charges made by the physician or hospital in connection with the administration of the products." The committee recognizes that the provision of the blood, or its derivatives, without charge, would seriously jeopardize those private blood banks which are now in operation and must, of necessity, make a charge for the products. However, the Red Cross will initiate blood centers only where there is a need for the program, and the determination of need, as well as approval of the program, is the joint responsibility of the county medical society and the local chapter. Evidence has been submitted to the committee of the willingness of the Association of Blood Banks and the Red Cross to cooperate in order that the over-all objectives of the Red Cross Blood Program may be realized. Private blood banks which, in the opinion of the county medical society, are meeting the community need for blood, will continue in operation and the Red Cross will not establish a center in the community. It is of interest to note that several Red Cross Centers have been established, or are contemplated, where the private blood banks have found it impossible to meet the growing demand for blood and have requested the establishment of a Red Cross Center.

The committee recommends that a statement including this report, if approved by the House of Delegates, be published in an early issue of The Journal; also, that copies be forwarded to all state and county medical societies, in order that their officers and appropriate committees may know the policy of the American Medical Association and the developments in the Red Cross Blood Program.

The committee believes that it should be continued as long as conditions warrant, and that its continuity of personnel be insured.

A letter from Dr. G. Foard McGinnes, Vice President for Health Services, American Red Cross, addressed to the committee, reads as follows:

"The American National Red Cross, through the officers of its medical department, its Advisory Board on Health Services and its Committee on Blood and Blood Derivatives, desires at this time to express its appreciation of the cordial cooperation maintained by your Committee in furthering the development of the American National Red Cross Blood Program. The American Medical Association Committee has been of great assistance in guiding the American National Red Cross in the early development of its regional centers for blood procurement and in aiding in the maintenance of the highest technical standards of blood processing and distribution.

"So valuable to the American National Red Cross has been the assistance of the American Medical Association that the Red Cross hopes your Committee can be maintained on a permanent basis, with continuity of personnel insured by infrequent changes in its membership.

"The developments in the expansion of the program of regional centers to cover the needs of the country, where adequate facilities are not now available, the ever present possibility of the disclosure of new and valuable blood derivatives or the modification of now established fractions of blood and the potential needs of blood for national security are matters of immediate concern to both the American Medical Association and the American National Red Cross.

"In the next few years, to keep pace with an ever changing problem, the American National Red Cross welcomes a close association with your Committee in building its National Blood Program, so that the American people may be assured of its maximum benefits in time of peace, in national disaster or in time of war."

Tentative plans are being made for a joint meeting in February of the committee with the appropriate committee of the Red Cross. A report of this meeting, in addition to any other meetings the committee may have, and the progress made by the Red Cross Blood Program, will be submitted to the Board of Trustees and the House of Delegates prior to the next annual session of the House.

Respectfully submitted,

L. W. Larson, Chairman.
Herbert P. Ramsay.
John W. Green.
James R. Reuling.
William D. Stovall.
Deering G. Smith,
W. A. Coventry.
James Q. Graves.
James Stevenson.

Statement of Policy Regarding Operation of a Blood Program at Portland, Multnomah County, Oregon

(Copied from the *Bulletin* of the Multnomah County Medical Society, July 1948)

WITNESSETH:

Whereas, Red Cross and Society desire to set up a blood program at Portland, Oregon, with a central laboratory at Portland, Oregon, and distribute blood to approved agencies in Oregon and southern Washington, all in accordance with the policies stated herein; and

Whereas, Parties hereto recognize that the medical profession is particularly qualified to supervise and control the technical operation of such blood program and its related activities; now therefore

Parties hereto agree that the operation of such a blood program shall be conducted in accordance with the following policies:

1. The Council of Society shall appoint a Technical Supervisory Committee (hereinafter called "Committee") of five members of Society, two of whom shall be pathologists, one an internist, one a surgeon and one a general practitioner, each of whom shall serve until his successor shall be appointed by the said Council.

2. The duties of said Committee shall be as follows:

(*a*) The direct supervision and control of the blood program, central laboratory or laboratories and blood products, including, but not confined to, the specific duties set forth herein.

(*b*) The selection of a Technical Director, who shall be a physician and surgeon with special qualifications to administer the blood program and related activities. Through the Technical Director, the Committee shall select the other technical personnel in the blood program and its related activities. The Technical Director shall be directly responsible to the Committee.

(*c*) The establishment of technical standards for such blood program and related activities, which standards are to conform to those set forth in the National Blood Program Technical Manual of the American Red Cross and all state and federal governmental requirements, provided that more exacting technical procedures may be prescribed by the Committee when the Committee deems it advisable.

(*d*) The establishment of technical standards for hospitals which are to be serviced under the program, in relation to such program, also the selection of such hospitals and establishment of quotas for each hospital. Hospitals shall be required to have adequate facilities for storage, typing, crossmatching, investigations of reactions, and shall supply the blood without charge except for a nominal charge for the administration of the blood, including additional typing and cross matching, which charge shall be uniform for all hospitals.

(*e*) The Direction, through the Technical Director, of all volunteers in such program, when their duties involve the technical aspects of the blood program.

(*f*) The review and approval of all publicity controlled by the Red Cross relating to the program, prior to release, in order to insure its conformity to the professional standards.

3. The Red Cross shall be the sole donor recruitment agency and shall procure volunteer donors to the best of its ability.

4. The Red Cross shall provide and pay for all physical facilities, equipment, supplies and other functions necessary to carry on the program.

5. The Red Cross shall pay the salaries of all paid personnel engaged in the program.

6. The Red Cross shall secure and pay for adequate malpractice and other insurance to cover the liability of the members of the Committee, Technical Director and other employees arising out of the operation of the program, so far as is obtainable.

7. The program shall be operated in such a manner as not to provide any monetary return to Society or Red Cross.

8. The Red Cross agrees to furnish the Committee with copies of all reports and correspondence relating to the technical phases of the blood program which are sent to, or received from, the Pacific Area Office or the National office of Red Cross.

9. Red Cross will be permitted to draw upon the reserves of blood and blood derivatives in this program as occasion may arise for use in connection with disasters and other emergencies.

10. As soon as practical a written administrative procedure shall be prepared, to be approved by the Committee and Red Cross.

11. Either party hereto may terminate participation in the above program upon giving to the other party thirty days' notice in writing.

In Witness Whereof, the parties hereto have caused this statement of policy to be executed in quadruplicate by their duly authorized officers the day and year first above written.

Portland-Multnomah County Chapter
American National Red Cross
(Signed) A. W. Grath,
Chairman.

Multnomah County Medical Society
(Signed) J. Milton Murphy, M. D.,
President.

Approved:
(Signed) Asa Barnes, M.D.,
Medical Director, Pacific Area,
American National Red Cross.

Approved:
(Signed) Ross T. McIntire,
Administrator, National Blood Program,
American National Red Cross.

REPORT OF COMMITTEE ON REBATES

Dr. Frank R. Ober, Chairman of the Committee on Rebates, at the request of Dr. Henderson, presented the following report, which was referred to the Reference Committee on Miscellaneous Business:

Adequate resolutions have been passed previously by this House of Delegates which definitely declare rebates in all forms to be unethical. (Example: Action taken by the House of Delegates on the dates June 11, 1942, and June 11, 1947.)

Report of Reference Committee on Amendments to the Constitution and By-Laws on Resolutions on Rebates:

"Resolution on Rebates: Your reference committee has given very serious consideration to these resolutions. It is the opinion of your reference committee that the practices referred to in the resolutions are beneath the dignity of the learned profession, are basically dishonest and are a violation of the Principles of Medical Ethics. Your reference committee therefore recommends that the following substitute resolutions be adopted:

"Whereas, It has been brought to the attention of the House of Delegates that the unscrupulous practice of rebates to physicians is being engaged in by various commercial organizations, laboratories, supply houses and in some professional relationships between certain physicians; and

"Whereas, All such practices are clearly in violation of the Principles of Medical Ethics; therefore be it

"*Resolved*, That the House of Delegates of the American Medical Association express stern disapproval of the practices by any of the members of its component societies of referring patients to commercial organizations, laboratories or other physicians who advertise to the public and others than the medical profession, who employ so-called steerers or cappers or who pay, or offer to pay, rebates or commissions in any guise whatsoever, or who in any other manner violate the Principles of Medical Ethics of the American Medical Association; and be it further

"*Resolved*, That any member violating these resolutions be subject to such disciplinary action as is deemed advisable by the county society in which such physician holds membership; and be it further

"*Resolved*, That the Secretary of the American Medical Association be instructed to send a copy of these resolutions to each state and county society accompanied by a letter to the secretary of each setting forth that all such unethical practices are disreputable and unscrupulous and, if not controlled, may soon besmirch the reputation of the entire medical profession."

Resolutions on Rebates: Resolutions on rebates presented by Dr. William Weston, Section on Pediatrics, which were referred to the Reference Committee on Miscellaneous Business (Excerpt from Proceedings of House of Delegates, Atlantic City, 1947):

"WHEREAS, Complaints have been made from time to time by individual members of the American Medical Association and by constituent associations of the existing practice of accepting rebates by members, and especially has this practice been emphasized in regard to oculists and opticians in which it has been charged that many oculists conspire with opticians by accepting rebates on prescriptions for glasses; and

"WHEREAS, The knowledge of this practice has become so widespread that it has been the subject of criticism by the lay press and by politicians unfriendly to the American Medical Association; and

"WHEREAS, The American Medical Association through the House of Delegates has officially condemned all rebate practices in whatever shape or form they may exist and has distinctly expressed the opinion that such practices are in violation of the ethics of the American Medical Association; therefore be it

"*Resolved*, That the House of Delegates reiterate its condemnation of this practice by any member accepting rebates; and be it

"*Resolved*, That the Secretary of the American Medical Association communicate this action to the various county societies forming the constituent associations and request that members accepting rebates be removed from the roll of membership, unless such member or members promise to desist from such practice in the future, and that the secretaries of the various county societies communicate their action in this matter to the Secretary of the American Medical Association."

In the opinion of this Committee on Rebates, the enforcement of these resolutions is the sine qua non of the successful elimination of these practices. It recommends that each component county society be urged to employ an auditor to examine the books and records of at least 10 per cent of its membership, chosen by lot, each calendar year. The audits must then be presented to the governing body of the county or district society within sixty days of the completion of the audit. A report of the action taken by the county society shall then be sent within thirty days to the governing body of the constituent state society.

[The Reference Committee on Miscellaneous Business in 1947 reported on the Resolution on Rebates as follows, and the report of the reference committee was adopted:

"Resolutions on Rebates: The fact that accepting rebates by ophthalmologists has year after year been declared unethical by the Judicial Council, and such declaration has been approved by each House of Delegates to which the Council reported, seems convincing evidence that the House of Delegates frowns on this practice. Furthermore, at this very session of the House of Delegates, you have approved a most forceful enunciation of this principle in the present report of the Judicial Council. Your reference committee can only reaffirm this principle and recommend that it be adopted.

"Your reference committee, however, believes that the American Medical Association should not 'request' constituent societies to expel members under any circumstances. This procedure is suggestive of and might be interpreted as dictatorship. It therefore, with the approval of the author of these resolutions, has amended them so that the last paragraph shall read:

"'*Resolved*, That the Secretary of the American Medical Association communicate this action to the various county societies forming the constituent associations and advise them again that members accepting rebates are violating our Principles of Medical Ethics and recommend that each component society take appropriate action whenever this situation exists.'

"It further amends these resolutions, without the knowledge of their author, that another 'resolved' be added to it as follows:

"'*Resolved*, That the Board of Trustees of the American Medical Association appoint a committee to investigate all phases of this subject, including the alleged arbitrary control of the retail price of optical appliances by manufacturers, which committee is to report its findings to the House of Delegates at the next supplemental session.'

"In conclusion, your committee believes that the Section on Ophthalmology of the American Medical Association could and should stop this practice."]

Your committee also recommends that the constituent state associations shall endeavor to have legislation introduced with the purpose of making the practice of rebating to or by physicians illegal.

Respectfully submitted,

FRANK R. OBER, Chairman.
E. V. L. BROWN.
LAWRENCE T. POST.
E. VINCENT ASKEY.

Resolution on Blue Cross-Blue Shield Proposals

Dr. C. C. Sherburne, Ohio, presented by title a Resolution on Blue Cross-Blue Shield Proposals, which was referred to the Reference Committee on Medical Service and Prepayment Insurance Plans.

Resolution on Associated Medical Care Plans Incorporated

Dr. E. H. McLean, Oregon, presented the following resolution, which was referred to the Reference Committee on Medical Service and Prepayment Insurance Plans:

WHEREAS, Associated Medical Care Plans, Incorporated, derived its initial financing from the American Medical Association, and subsequent financing is now derived from a per capita tax on subscribers of physician-sponsored prepaid medical care plans; and

WHEREAS, Associated Medical Care Plans program was established as and intended to be a clearing house for information, statistics and other similar aid to the medically sponsored prepaid care plans; and

WHEREAS, Associated Medical Care Plans has consistently failed to pursue these objectives, but instead has devoted itself to making and attempting to enforce policy of its own determination and for its own objectives; and

WHEREAS, Associated Medical Care Plans, Incorporated, continued to engage in these activities after the disapproving action of the Council on Medical Service of Oct. 2, 1948; and

WHEREAS, It has failed to equalize the distribution of a majority and minority report of its Commission on the subject of Blue Cross Amalgamation National Insurance Company, giving a wide circulation to the majority report but no distribution of the minority report; and

WHEREAS, It has succeeded in having articles favorable to its views appear in *Medical Economics* without any opposing point of view being similarly presented; and

WHEREAS, It subsequently widely disseminated reprints of this article but again failed to distribute any opposing point of view; and

WHEREAS, This involved the use of funds derived from subscribers which has been characterized as a misuse of funds; therefore be it

Resolved, That the American Medical Association withdraw its approval and support of Associated Medical Care Plans, Incorporated, and deny responsibility for any future activities of Associated Medical Care Plans, Incorporated.

The House recessed at 3:10 p. m. and reconvened at 4:30 p. m., with the Speaker, Dr. F. F. Borzell, in the Chair.

Report of Reference Committee on Emergency Medical Service

Dr. Thomas F. Thornton, Chairman, presented the following report, which, on motion of Dr. Thornton, duly seconded and carried, was adopted:

Resolutions on Favoring Enactment of Legislation on Establishment of Medical Advisor: Your committee recommends adoption of the resolution.

Respectfully submitted,

THOMAS F. THORNTON, Chairman.
JAMES BEEBE.
F. S. CROCKETT.
W. A. COVENTRY.
H. B. GOODRICH.

Report of Reference Committee on Executive Session

Dr. J. Stanley Kenney, Chairman, presented the following report:

Your Reference Committee on Executive Session had referred to it seven resolutions. After careful consideration of all of these, there is only one which, in the opinion of your Committee, should be reported in Executive Session.

This report therefore is in the nature of a preliminary report.

1. Resolution on Executive Sessions: This resolution has already been referred to the Reference Committee on Amendments to the Constitution and By-Laws.

2. Resolutions on a Public Relations Program: These resolutions, introduced by Dr. Robertson Ward, California, should be rereferred.

3. Resolutions on Compulsory Health Insurance: Your committee recommends rereferring the following resolutions introduced by Dr. L. G. Christian, Michigan:

Whereas, We believe that compulsory health insurance will be proposed when our National Congress convenes in 1949; and

Whereas, Great pressure will be brought to bear to force a hurried approval of a form of medical care to which there are major objections; and

Whereas, The acceptance of compulsion in medicine has been but a forerunner to the socialistic state; and

Whereas, There are other methods of obtaining complete medical care for every one everywhere other than by compulsion; and

Whereas, The time has come when the American Medical Association, a powerful organization of 134,776 physicians, must present a united front capable of speaking for its membership as to what constitutes good medical care for our citizens; therefore be it

Resolved, That such organizational changes be made, if necessary, at once so that our national organization can present a united front against compulsion; and be it further

Resolved, That an assessment of $10 be levied on each Doctor of Medicine in order that an efficient public relations department, including an office in Washington, can be established at this time; and be it further

Resolved, That the well trained staffs of the National Physicians committee and the American Association of Physicians and Surgeons be employed to implement these activities thereby uniting all Public Relations under one head; and be it further

Resolved, That the Board of Trustees be requested to place these directives in effect by February 1, 1949.

4. Resolution on Federal Subsidization of Medical Education: Your committee recommends that the following resolution be rereferred:

Whereas, The policy of the American Medical Association on federal subsidization of medical education has been clearly defined by its Council on Medical Education and Hospitals; and

Whereas, It is apparent from the recent action taken by affiliated specialty academy that this policy is not being observed; be it

Resolved, That the American Medical Association through its Council on Medical Education and Hospitals reaffirm its statement on this matter and disseminate this statement to the responsible officials of all affiliated organizations and specialty groups.

5. Resolutions on Medical Service Plans: Your committee recommends that the following resolutions be rereferred:

Whereas, The American Medical Association is cognizant of the fact that a large segment of the people of America, otherwise self supporting, are experiencing increasing difficulty in meeting the cost of medical care largely due to more efficient but more expensive methods and technics of diagnosis and treatment demanded by modern medicine; and

Whereas, The American Medical Association is sympathetically aware of the desperate need, particularly of the low income group, of assistance in financing such care; and

Whereas, Assistance to the public in meeting the cost of adequate medical care in catastrophic illness constitutes the most serious problem in the field of medical economics; and

Whereas, The experience in operation of voluntary medical service plans, established by units of organized medicine, during the past five years has demonstrated the fact that the care of serious illness in hospitals, covering medical, surgical, maternity, anesthesia and consultative services, is a sound and practicable insurance risk; and

Whereas, These voluntary medical service plans have proved to be a most effective means of increasing the economic availability of adequate medical care in catastrophic illness for their policy holders; therefore be it

Resolved, That the American Medical Association reiterate to the public its approval of these medical service plans and stress the desirability of their rapid expansion; and further be it

Resolved, That the American Medical Association urge, with moral support and where necessary with financial assistance, every constituent state society to undertake the organization and operation of medical service plans, covering the services mentioned above, as expeditiously as possible; and further be it

Resolved, That the American Medical Association urge the rank and file of the profession to participate in and give whole hearted support to the operation of these duly authorized and approved medical service plans; and further be it

Resolved, That the American Medical Association announce to the public the availability of such plans and give the widest possible publicity as to the purpose of and the benefits to be derived from nonprofit voluntary prepayment medical service plans.

6. Resolutions on Proposed Veterans Hospital near Ann Arbor, Mich.: Your committee recommends rereferral of the following resolutions:

Whereas, The Veterans Administration proposes to establish and operate a five hundred bed general hospital near Ann Arbor, Mich., in conjunction with the Medical School of the University of Michigan; and

Whereas, This proposal is part of an over-all plan of the Veterans Administration to establish throughout the United States for veterans' care hospital facilities to a total of 300,000 hospital beds; and

Whereas, The number of hospital [illegible] 118,000, now available for veterans' care is far in e[illegible] sonably [illegible] anticipated future needs for care of [illegible] and

Whereas, The majority of the persons now occupying Veterans Administration hospital beds have no service-connected disability or illness whatsoever; and

Whereas, The present facilities of the University Hospital at Ann Arbor are adequate for the care of indigents referred there under state law; therefore be it

Resolved, That the Veterans Administration should provide veterans with the best of medical and hospital care in all cases of service-connected disability, and with the ultimate in hospital accommodations and equipment necessary to facilitate such care; and be it further

Resolved, That medical or hospital care in other than service-connected disabilities should be furnished our citizens at government expense on the basis of economic need only and without reference to service with the armed forces; and be it further

Resolved, That based on these principles, the number of hospital beds in Veterans Administration Hospitals should be limited to the number required to care for service-connected disabilities only; and be it further

Resolved, That to establish a Veterans Administration General Hospital near Ann Arbor at this time is not necessary and not in the best interest of the public; and be it further

Resolved, That a copy of these resolutions be sent to the Regents of the University of Michigan, to the Dean of the University of Michigan Medical School, to the Dean of Wayne University College of Medicine and to its governing body, to each state medical society and to the Board of Trustees of the American Medical Association; and be it further

Resolved, That our delegates to the American Medical Association be instructed to present or support similar resolutions to the House of Delegates of the American Medical Association at its next session.

7. Resolutions on Voluntary Participation in Government Plans: Your committee will report on these resolutions later in Executive Session.

Respectfully submitted,

J. Stanley Kenney, Chairman.
Jesse D. Hamer.
Claude R. Keyport.
E. W. Hansen.
Walter G. Phippen.

The Speaker rereferred the resolutions indicated as follows:

Resolutions on a Public Relations Program to the Reference Committee on Legislation and Public Relations.

Resolutions on Compulsory Health Insurance to the Reference Committee on Legislation and Public Relations.

Resolution on Federal Subsidization of Medical Education to the Reference Committee on Medical Education.

Resolutions on Medical Service Plans to the Reference Committee on Legislation and Public Relations.

Resolutions on Proposed Veterans Hospital near Ann Arbor, Mich., to the Reference Committee on Miscellaneous Business.

On motions of Dr. Kenney, duly seconded and carried, the first six sections of the report of the reference committee were adopted.

Dr. Kenney stated that the committee would report on the Resolutions on Voluntary Participation in Government Plans in Executive Session on Wednesday, and moved the adoption of this section of the report. The motion was regularly seconded and carried.

Presentation and Address of Dr. W. L. Pressly, Due West, S. C., Recipient of the General Practitioners' Award

Dr. E. L. Henderson, Chairman, Board of Trustees, presented Dr. W. L. Pressly, Due West, S. C., Recipient of the General Practitioner's Award, who spoke as follows:

Dr. Sensenich, Dr. Lull, Dr. Henderson, Mr. Speaker and Members of the House of Delegates: If I have overlooked anyone, I apologize, but to all I am deeply indebted.

I appreciate, from the depth of my heart, this honor that you have bestowed on me. I realize the responsibilities, also, that go along with this honor, and I assure you that I will use this honor to the furtherance of medicine, especially as it relates to the field of general practice, and I accept this honor with the greatest of humility. I pledge to you my best service in whatever way I can use this during the coming years. I thank you.

Dr. Philip W. Morgan, Chairman, Reference Committee on Rules and Order of Business, moved that the House recess to reconvene at 1:15 p. m., Wednesday, Dec. 1, 1948. The motion was duly seconded and carried, after discussion by Dr. T. K. Gruber, Michigan, and the Speaker.

The House recessed at 4:45 p. m., to meet Wednesday, Dec. 1, 1948, at 1:15 p. m.

(To be continued)

Washington Letter

(From a Special Correspondent)

Dec. 13, 1948.

Rep. Dingell Derides American Medical Association Health Education Campaign

Representative John D. Dingell (Democrat) of Michigan, who will lead efforts to get a compulsory sickness insurance bill through the House in the 81st Congress, unleashed a new attack on American Medical Association and National Physicians Committee in mid-December. He told the press that the $25 membership assessment voted by the House of Delegates in St. Louis is, in his opinion, "a tribute to the American Medical Association medical front and the fake front of National Physicians Committee." He predicted that fewer than one-half of the Association's members will pay the assessment and charged that the decision to make it constitutes a "declaration of war" on the people. "The people will take up that challenge," said Dingell. "The average citizen will go up to his doctor and say, 'I'm paying you. Are you for or against me?' Whether that doctor will hold or lose that patient will depend on the answer he gives."

The Congressman claimed that he has received many anonymous letters from physicians proclaiming their partisanship to compulsory sickness insurance. He told of having invited thirty practicing physicians to an informal conference held recently in a Washington hotel room, but only 17 came. Professional calls prevented a few of the others from attending, but most of the other absentees stayed away because they could not risk possible repercussions, Dingell asserted.

He expressed the belief that the Murray-Wagner-Dingell bills to be introduced in both houses of Congress next month will not differ appreciably from S. 1320, on which hearings were conducted in 1947 and 1948 before the Senate Committee on Labor and Public Welfare.

Rep. Harness Noncommittal on Future Plans

The Journal's Washington correspondent interviewed Representative Forest A. Harness of Indiana, chairman of the House Committee on Publicity and Propaganda (Mr. Harness, a Republican, was defeated for reelection last month) on his return from St. Louis, where he addressed the Conference of State Medical Association Secretaries and Editors. In his speech, Mr. Harness said: "Although I have been denied the opportunity to serve in that body (81st Congress), it shall be one of my principal objectives to see that this work is carried on informally in the 81st Congress by the Republican minority. In every way possible, also, I shall devote my own efforts to the cause." His reference was to combating federal "propaganda" activities.

13 Nuclear Energy Volumes Nearing Publication

Thirteen volumes of the National Nuclear Energy Series will be published in the next several months, according to Atomic Energy Commission. The first, now ready for release, is "Histopathology of Irradiation from External and Internal Sources," edited by William Bloom, Department of Anatomy, University of Chicago. Among other titles now in final stages of editing are "Industrial Medicine," edited by Robert S. Stone, University of California, and "Pharmacology and Toxicology of Uranium and Fluorine Compounds," edited by Drs. Carl Voegtlin and Harold C. Hodge, University of Rochester. The National Nuclear Energy Series, which will run to about sixty volumes when completed, is being published by McGraw-Hill under a contract with Columbia University, the latter representing Atomic Energy Commission and its research contractors.

Pollution Control Field Offices Selected

Locations of drainage basin area offices throughout the country have been announced jointly by the U. S. Public Health Service and the Federal Works Agency. Under the Water Pollution Control Act enacted last June by Congress, the Surgeon General will provide financial and technical aid to the states and the fourteen basin offices will be operating centers for federal-state cooperation. The areas and headquarters cities are as follows: area 1, New England, Boston; 2, North Atlantic, New York City; 3, Middle Atlantic, Washington, D. C.; 4, Southeast, Atlanta; 5, Ohio-Tennessee, Cincinnati; 6, Great Lakes, Chicago; 7, Upper Mississippi River, St. Louis; 8, Missouri River, Kansas City; 9, Southwest Lower Mississippi, Little Rock; 10, Western Gulf, Dallas; 11, Colorado River, Boulder City, Nev.; 12, Great Basin, San Francisco; 13, California, San Francisco; 14, Pacific Northwest, Portland, Ore.

"Measurement of Radioactive Isotopes" Published

A 12 page pamphlet intended to assist users of radioactive isotopes, with particular reference to accurate measurement, has been published by the National Bureau of Standards. In preparation of the guide, the Bureau distributed identical samples of radioactive materials to about forty hospitals, universities and research laboratories. The range of values reported by them varied as much as 80 per cent from the average. Directions for overcoming difficulties in measurement are given in the pamphlet, entitled "Measurement of Radioactive Isotopes" (NBS Circular 473). It is obtainable, at 5 cents a copy, from Supt. of Documents, Govt. Printing Office, Washington 25, D. C.

Federal Study of "Smog" Incident

Early in December the Industrial Hygiene Division of U. S. Public Health Service launched an investigation of the "smog" disaster in Donora, Pa., which was blamed for 20 deaths. A team comprising physicians, nurses, engineers and analysts were sent to the Pennsylvania community to study clinical, environmental and meteorologic conditions. Medical data will be collected on smog casualties, and a survey will be undertaken of materials and processes used in industrial plants. Meteorologic conditions in the area, which were responsible for the enveloping blanket of smog, will also be investigated.

Intensify Hunt for Better Insecticides

The Department of Agriculture, concerned by the failure of DDT (dichlorodiphenyltrichloroethane) as a fly killer in certain sections of the country, is intensifying its research to find a replacement. To date twenty-one analogues of DDT and nineteen other closely related materials have been tested by the Bureau of Entomology and Plant Quarantine. "The steadily increasing resistance of flies in nature to the residual killing effects of DDT insecticides is a problem demanding prompt solution," said Dr. F. C. Bishopp, in charge of the Bureau's research program. We hope to find an adequate alternative for DDT, where necessary, for fly control by spring."

State Health and Safety Legislation Discussed

Reports on prospective state legislation in such fields as health and safety, child labor, wages and hours and workmen's compensation, were presented at the fifteenth annual National Conference on State Labor Legislation held in Washington from November 30 to December 2. Delegates appointed by governors of about forty states attended the meeting, which was called by Secretary of Labor Maurice J. Tobin. (Forty-four state legislatures will convene in 1949.)

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 7-8. Dr. Donald G. Anderson, 535 N. Dearborn St., Chicago 10, Secretary.

National Conference on Rural Health, Chicago, Palmer House, Feb. 4-5. Dr. F. S. Crockett, 535 N. Dearborn St., Chicago 10, Chairman.

American Society for Surgery of the Hand, Chicago, Jan. 21-22. Dr. Joseph H. Boyes, 1401 S. Hope St., Los Angeles 15, Secretary.

International Post-Graduate Medical Assembly of Southwest Texas, San Antonio, Jan. 25-27. Dr. John J. Hinchey, P. O. Box 2445, San Antonio, Secretary.

Southeastern Allergy Association, Durham, N. C., Washington-Duke Hotel, Jan. 22-23. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia, S. C., Secretary.

Southeastern Surgical Congress, Biloxi, Miss., Jan. 24-27. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Ga., Secretary.

Western Section American Urological Association, Coronado, Calif., Hotel del Coronado, Jan. 17-19. Dr. Adolph A. Kutzmann, 1930 Wilshire Blvd., Los Angeles 5, Secretary.

GOVERNMENT SERVICES

ARMY

POSITIONS OPEN IN PANAMA CANAL SERVICE

The Surgeon General announced December 1 that permanent Civil Service appointments for physicians are available in the Panama Canal Medical Service with salaries ranging from $5,599 to $7,794, with transportation to the Canal Zone provided for physicians, their families and household goods, and return transportation on completion of a minimum of one year's service. Medical officers accepted under this program will serve as physicians in outpatient treatment centers maintained by the Panama Canal Health Department. These centers, some large, some small, are adequately staffed with graduate nurses and pharmacists. Housing is assured at rentals less than in cities in the United States. The public school system is American in type with a fully accredited high school in Balboa and in Cristobal as well as a junior college in Balboa. Living conditions generally are comparable with those in a small town in the United States except for a tropical climate and the fact that food, clothing and some other necessities are obtained through government commissaries.

ACCEPTED FOR TRAINING IN CIVILIAN INSTITUTIONS

The Surgeon General's Office announces that the following medical department officers have been accepted for training by civilian schools and hospitals:

Officer	School or Hospital	Subject
Col. Charles J. Farinacci	Columbia University New York	Surgical pathology
Col. Carl M. Rylander	University of Michigan Ann Arbor, Mich.	Orthopedic surgery
Lt. Col. H. C. Harrell	University of Minnesota	Cardiovascular roentgenology
Lt. Col. Robert H. Holmes	Duke University Durham, N. C.	Pathology
First Lieut. William A. Abele	Grace-New Haven Community Hospital	Internal medicine
First Lieut. Mason R. Baker	Methodist Hospital *Indianapolis*	Intern training
First Lieut. Stephen H. Deschamps	Grace-New Haven Community Hospital	Internal medicine
First Lieut. William C. Hedberg	Evanson Hospital Evanston, Ill.	Intern training
First Lieut. James M. Keegan	City Hospital, Welfare Island, New York	Intern training
First Lieut. Adam S. Kowalczyk	Oak Ridge Institute of Nuclear Studies, Oak *Ridge, Tenn.*	Radioisotope technics
First Lieut. Vol K. Philips	New York Hospital New York	Intern training

PROCUREMENT OFFICE LABORATORY

Medical equipment destined for United States armed forces throughout the world is tested in a unique laboratory of the Procurement Office in Brooklyn at the rate of 1,134 samples a month. The laboratory, established three years ago, serves a $50,000,000 purchasing program for the current fiscal year and is the only military laboratory in the country that makes such tests routinely. Similar tests are made by private laboratories and the Bureau of Standards in Washington on a request basis. The armed forces laboratory in Brooklyn also tests all medical dental and veterinary supplies and equipment for the Veterans Administration and for the European and Asiatic aid programs. According to the *New York Times,* the laboratory has found that about 9 per cent of the items tested are defective in some way. The manufacturers of such items then receive an opportunity to rework their products. The joint overseers of the laboratory are Lieut. Col. Bernard Korn and Lieut. Comdr. Claude V. Timberlake.

COMMISSIONS FOR TOXICOLOGISTS

Reserve commissions in the Army of the United States are available to qualified toxicologists. The commissions range from those of first lieutenant up to and including colonel, depending on the applicant's qualifications and experience. Applications will be considered from persons up to 55 years of age. All must be citizens of the United States. No previous military experience is required.

For appointment in the grade of first lieutenant, applicants must meet one of the following three requirements: (1) possess a doctor's degree from a school acceptable to The Surgeon General in any of the medical allied sciences listed below; (2) possess a master's degree from a school acceptable to The Surgeon General and have a minimum of two years of professional experience in any of the medical allied sciences listed; (3) possess a bachelor's degree from a school acceptable to The Surgeon General and have a minimum of three years of professional experience in any of the medical allied sciences listed or in other related sciences for which there is a demonstrated need in the Medical Department: bacteriology, biochemistry, parasitology, serology, entomology, nutrition, toxicology, industrial hygiene, industrial hygiene engineering.

For appointment in the grades of captain through colonel, applicants must have met any one of the requirements for first lieutenant and, in addition, have had further experience in the medical allied sciences as follows: for captain, four years; for major, nine years; for lieutenant colonel, fourteen years, and for colonel, nineteen years. Applicants who possess bachelor's degrees in any of the nine fields mentioned but who lack the specified professional experience to attain eligibility may qualify for a commission in the field of pharmacy and medical supply and administration specialist.

Details of the program are provided in Department of the Army Circular No. 210, dated July 14, 1948, which may be obtained from The Adjutant General, Department of the Army, Washington 25, D. C., from local Reserve Unit Headquarters or from Army Headquarters at New York, Baltimore, Atlanta, Chicago, Houston or San Francisco.

ENCEPHALITIS OUTBREAK IN JAPAN

The epidemic of encephalitis which developed in Japan during the summer is said to have been the worst epidemic of encephalitis reported. The peak occurred in August and it was practically over by the end of September. The number of cases is said to have been 6,867, of which 964 were fatal. Only 3 deaths occurred among American personnel. The Surgeon General of the Army requested Dr. William M. Hammon, epidemiologist of the Hooper Foundation for Medical Research and the School of Public Health at the University of California, to proceed to Japan to investigate the outbreak. Dr. Hammon reported to the Surgeon General the results of his investigation early in October. This was the sixth trans-Pacific flight which Dr. Hammon had made in his study of this disease. Lieutenant Colonel William D. Tigertt of the Army Medical Corps, commandant of the 406th Medical General Laboratory, was in charge of the studies at the start of the season in Tokyo. Dr. Grant Taylor of Duke University, Durham, N. C., was in Japan as consultant to the Army Commission on neurotropic virus disease when the epidemic occurred. While this epidemic was larger than the previous record epidemic of 1924, the virulence of the infection was less. The Japanese gave the name type B to this form of encephalitis in 1924 to distinguish it from the von Economo type which followed the influenza pandemic in 1918 and which the Japanese called type A.

NAVY

ADMIRAL BOONE PRESIDENT OF MILITARY SURGEONS

The Association of Military Surgeons of the United States at its recent meeting in San Antonio, Texas, elected Rear Admiral Joel T. Boone of Washington, D. C., president of the organization for the forthcoming year. Admiral Boone, now General Inspector of the Medical Department, is the eleventh Navy medical officer to be elected to this office. He entered the Navy in 1914. For extraordinary heroism in World War I, he was awarded the Congressional Medal of Honor and the Army's Distinguished Service Cross. In addition to the Silver Star Medal with five Oak Leaf Clusters, the Purple Heart with two Oak Leaf Clusters awarded in World War I, the Bronze Star, and Secretary of Navy citation ribbon awarded in World War II, he holds many other decorations. From 1922 until 1933, he was personal physician to President Harding, President Coolidge and President Hoover. During World War II, Admiral Boone served at the Naval Air Station, San Diego, Calif., and as Medical Officer in Command of the Naval Hospital, Seattle, later serving as Fleet Medical Officer on the staff of Admiral Halsey.

NEW NAVY INTERNS IN CIVILIAN INSTITUTIONS

Thirty-one lieutenants (jg) in the Medical Corps Reserve have reported for their first active duty as interns in civilian medical institutions under the Navy Medical Training Program. On completion of the internship, these officers will serve on active duty at Naval medical facilities; they are: Francis B. Adams Jr., Seneca, S. C.; Thomas M. Auerbach, Chicago; James K. Avery, Memphis, Tenn.; William E. Barnes, Waukegan, Ill.; Joseph Bartos, Bethlehem, Pa.; Jack H. Baur, Cincinnati; Jesse A. Bowers, Charleston, S. C.; Carlin V. Chenoweth, Chicago; Francis L. Conwell Jr., Tarentum, Pa.; James W. Daly, White Plains, N. Y.; Philip J. Dorman, Cambridge, Mass.; Samuel I. Etz, Trenton, N. Y.; Hector H. Filardi, New Orleans; Melvin A. Goldberg, Chicago; Myron Gordon, Brooklyn; Robert M. Hidey Jr., Detroit; James B. Ivers, Beaumont, Texas; William B. Johnson, Ellaville, Ga.; Lloyd L. Lancaster, Wayne, Pa.; Donald L. Martin, Louisville, Ky.; Russell J. McIntire, Hastings, Neb.; George C. Moran, Oak Park, Ill.; Hobart M. Proctor, Denver; Andrew Raetzsch, Seguin, Texas; Howard B. Russman, Chicago; Walton E. Stevens, Baltimore; Jack O. Stoffel, Chicago; Harry W. Vandever, Enid, Okla.; Silas L. Warner, Chicago; Trevor G. Williams, Jersey City, N. J., and Park W. Willis III, Seattle.

FIRST ACTIVE DUTY

Reserve medical officers reporting for their first active duty at Naval medical facilities indicated are: Lieutenants (jg) Wayne J. Foster, Cedar Rapids, Iowa, to the Naval Training Center, Great Lakes, Ill.; Robert P. Gorman, Burlington, Wash., to the Naval Hospital, Oakland, Calif., and Mack A. Kellett Jr., of Marmaduke, Ark., to the Naval Training Center, San Diego, Calif.

TRANSFER TO REGULAR NAVY

Four medical officers on active duty in the Naval Reserve have recently transferred to the Regular Navy; they are: Commander Clifford A. Stevenson, Bowling Green, Ohio; Lieutenants (jg) Leo J. Frank Jr., Chicago; James H. Holmes, Little Rock, Ark., and Jay D. Wilson, Oklahoma City, Okla.

PERSONALS

Lieut. (jg) Philip O. Geib, M.C.R., U.S.N.R., of Manheim, Pa., has been voluntarily recalled to active duty and assigned to instruction in a residency in general surgery at the Naval Hospital, Philadelphia.

Lieut. (jg) Richard H. Lee, M.C.R., Northfield, Minn., has reported for his first active duty in a residency in psychiatry at the State University Hospital of Iowa, Iowa City, under the Medical Training Program.

Comdr. James C. Kimball, M.C., Retired, of Burbank, Calif., has requested recall to active duty and has been nominated for duty at the Naval Recruiting Station, Los Angeles.

PUBLIC HEALTH SERVICE

ADVANCE TRAINING FOR MEDICAL OFFICERS

Senior Assistant Surgeon P. J. Pesare has been assigned to the Peter Bent Brigham Hospital for a special postgraduate course in clinical heart disease.

Surgeon Clarence L. Hebert is taking a postgraduate course in anesthesiology at New York University College of Medicine.

Surgeon Joe M. Chisholm is attending Johns Hopkins for a special course in gynecologic pathology.

Surgeon Robert E. Miller, now attached to the Baltimore Marine Hospital, is being assigned to the Johns Hopkins School of Medicine next January for a six month period of graduate study.

Senior Assistant Surgeon James J. Thorpe is receiving psychiatric training at the Washington (D. C.) School of Psychiatry, and Senior Surgeon James V. Lowry, at the Washington School of Psychiatry and the Washington-Baltimore Psychoanalytic Institute.

Assistant Surgeon Robert Greenfield is receiving his second year of advanced training in biochemistry at the University of California, on completion of which he will return to the National Institutes of Health to do research.

MENTAL HEALTH PROGRAMS

The Mental Hygiene Division of the Public Health Service reports that grants-in-aid to states for mental health activities paid during the first quarter of fiscal year 1948-1949 totaled $945,321 as compared with a total of only $39,954 paid during the first quarter of the fiscal year 1947-1948. Although still handicapped by personnel shortages, most states are getting their programs into operation. Plans for 1949 have been completed by all territories and by all states except Pennsylvania and Wyoming. Budgets already submitted call for $2,981,554 out of the total available fund of $3,550,000.

During the fiscal year 1947-1948, mental health programs were initiated in twenty-two states and two territories and expanded in twenty-two states. Only areas not participating in the national program by the end of the year were Alabama, Missouri, Indiana, Pennsylvania, Wyoming, Puerto Rico and the Virgin Islands. In thirty-four states, one hundred and three clinics were organized or expanded. Federal expenditures for clinics and for other phases of state programs—such as training of state and local mental health personnel, professional services, preventive and educational activities and administration—totaled $1,164,218 during the fiscal year 1947-1948. Both Mississippi and Montana made biennial appropriations of $50,000 last year, their first appropriation of specific funds for noninstitutional mental health services.

PERSONAL

Dr. Will H. Aufranc has been appointed assistant chief of the Venereal Disease Division of the Public Health Service. Dr. Aufranc formerly was Venereal Disease Consultant for the Public Health Service in the region embracing four Western states and Alaska and Hawaii with headquarters in San Francisco.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ALABAMA

Organ Dedicated to Physician's Memory.—An organ, given to the Methodist Church at Camp Hill by his widow, was dedicated in August in memory of the late Dr. Wiley D. Wood, for 32 years a family physician of the village and surrounding territory. A brief address paid tribute to Dr. Wood and to Mrs. Wood, who has devoted a lifetime to interpreting classical music to the community.

ARKANSAS

Cancer and Tuberculosis Clinic.—A new clinic has been opened at Davis Hospital in Pine Bluff to provide facilities for the diagnosis and treatment of cancer and for weekly clinical consultation in tuberculosis under the auspices of the Jef- f[illegible] Tuberculosis Association. The clinic is designed [illegible] for indigent patients who may avail themselves [illegible] inical treatment on recommendation of their family [illegible]. Funds for the treatment of indigent patients will [illegible] ied by the Arkansas Cancer Control Commission [illegible] istance from the Arkansas Division of the American [illegible] Society.

CALIFORNIA

[illegible] **on Cerebral Palsy.**—The California State [illegible] Education reports the availability of a booklet, [illegible] for Parents of Cerebral Palsied Children," by [illegible] ackie. Copies are being sent to county, city and [illegible] intendents of schools and to directors of special [illegible] Sections of the book are entitled "Facts about [illegible] Palsy," "Training the Child" and "Sources of Aid [illegible] ral Palsied Children." It will also be sent on request [illegible] to the Department of Education, Library and Courts [illegible] ding, Sacramento 14.

COLORADO

Sanitarian Training Center.—Establishment of a sanitarian training center at the University of Colorado has been announced as a cooperative effort of the U. S. Public Health Service local district, the Colorado State Health Department, the City of Denver and the university's medical school. The center, designed to aid in overcoming a shortage of personnel trained in sanitation, will accept trainees from Colorado, Wyoming, Utah and Montana for a three month course of intensive study. Qualified young men and women will be selected by public health agencies in these states to participate in the program. Although classes will be held to a maximum of twelve trainees, trainees from other states will be accepted if possible. The sanitarian training center will be headed by Clyde F. Herring, sanitation engineer with the U. S. Public Health Service. The staff will include four full time members, and part time instruction will be given by personnel of the state and city departments of health. The first three month course will begin late this winter. Various places in Colorado will be used for field experience in restaurant and water sanitation and other phases of the program.

DISTRICT OF COLUMBIA

Aniseikonic Clinic.—An aniseikonic clinic has been established at the new George Washington University Hospital. The clinic makes use of a space eikonometer, purchased this year by the university. Patients are accepted for examination in the clinic through the hospital eye department, of which Dr. Ernest A. W. Sheppard, professor of ophthalmology at the George Washington University School of Medicine, is head.

ILLINOIS

Radio Broadcasts on Venereal Disease.—The benefits of early detection and proper treatment of venereal disease are being featured in fifteen minute broadcasts over Station WLPO in LaSalle every Friday at 1:30 p.m. The programs will continue through December, January and February. Sponsored jointly by the state department of public health and the Hygienic Institute of LaSalle, Peru and Oglesby, these broadcasts are in line with the national program of radio education in venereal disease. Station WLPO is the first in Illinois to present this health program as a public service, according to the state department of health. The transcriptions, which are available through the department to any radio station in the state, have been prepared by Columbia University and the U. S. Public Health Service.

Chicago

Free Chest X-Ray Center.—Michael Reese Hospital has opened a Chest X-Ray Center, which will give free examinations of the chest. The combined chest service of Michael Reese Hospital and Winfield Sanatorium, directed by Dr. Edwin R. Levine, will administer the program. The U. S. Public Health Service and the Illinois State Department of Public Health have made equipment and technicians available.

Dr. Sweany Awarded Medal.—Dr. Henry C. Sweany, medical director of research at the City of Chicago Municipal Tuberculosis Sanitarium and a member of the board of directors of the Tuberculosis Institute of Chicago and Cook County, received the Dearholt Medal awarded annually by the Mississippi Valley Conference on Tuberculosis. Dr. Sweany was cited for his research on bacteriology and pathology of tuberculosis and associated conditions.

Increase in Cost of Hospital Care.—The cost of hospital care in Chicago has increased an average of more than 116 per cent in the last eleven years, according to Roy Gibbons, whose story appeared in *The Chicago Tribune* November 21. Hospital care in 1947, he said, cost $42,000,000 in Chicago. In 1938 a patient could obtain care in a semiprivate room in most of Cook County's eighty-five hospitals for an average of $5.63 a day, including room, board, service and medicine. Today in the same hospitals, the average cost for the same care is $12.17, while private rooms now cost on the average of $17.94. Hospitals in the survey are accredited by the American College of Surgeons, and eighty-three are nonprofit organizations, which operate tax free. The survey showed that the highest rate charged by one tax-free hospital was $21.40 a day to patients receiving care in semiprivate rooms. Another hospital in a different city area, offering what was said to be a comparable kind of care, charged $8.30 a day. One of the two hospitals operating for profit charged an average of $12.93 a day for semiprivate care and another $13.31 a day. These private hospitals pay income, real estate and social security taxes while they pay a dividend or at least break even. Some of the nonprofit institutions show a collective deficit of $5,000,000 to $6,000,000 a year despite their tax-free status. Spokesmen for the Council of Social Agencies of Chicago, the Community Fund, the subscription investigating committee of the Chicago Association of Commerce and the Chicago Hospital Council say that what Chicago's hospitals need most of all is further adoption of a uniform accounting system.

INDIANA

Special Society Election.—The Indiana Health Officers' Association at the annual meeting in October selected Dr. John W. Palmeier, Sanborn, as president; Dr. Morris Balla, South Bend, secretary, and Dr. William D. Weis, Crown Point, treasurer.

Acting Chairman of Anatomy Department.—Richard L. Webb, Ph.D., professor of anatomy, has been named acting chairman of the department at the Indiana University School of Medicine, Bloomington, succeeding Dr. Edwin N. Kime, who has been transferred to the Indianapolis campus to supervise postgraduate work. Dr. Webb received his Ph.D. degree from the University of Illinois School of Medicine in 1931.

KANSAS

Academy of General Practitioners.—The Kansas Academy of General Practitioners, which was organized November 14 in Wichita, expects to work closely with the Kansas University Medical School in the university's program for refresher courses for general practitioners. Dr. Clyde W. Miller, Wichita, was chosen president; Dr. Louis B. Gloyne, Kansas City, president-elect; Dr. George L. Thorpe, Wichita, treasurer, and Dr. Albert C. Harms, Kansas City, secretary.

MASSACHUSETTS

Dr. Lowell Appointed Assistant Dean.—Dr. Francis C. Lowell, a member of Boston University School of Medicine faculty for eight years, has been appointed assistant dean of the school. Dr. Lowell, a graduate of Harvard Medical School, 1936, has been associate professor of medicine.

Centennial of Women's Medical College.—Among the medical centennials observed this year is that of the Boston Female Medical College, first medical institution in this country for women. Three years after it opened it changed its name to the New England Female College, inaugurating a complete graded course leading to a degree of Doctor of Medicine in 1852, and in 1874 merged with Boston University School, thus making the university coeducational.

MINNESOTA

Dr. Lundy Receives Award.—The Distinguished Service Award of the American Society of Anesthesiologists has been conferred on Dr. John S. Lundy, Rochester, for his contribution to anesthesia in introducing an intravenous anesthetic, his comprehensive textbook and the high caliber of his students. Dr. Lundy is head of the department of anesthesia at the Mayo Clinic and associated hospitals and professor of anesthesiology at Mayo Foundation Graduate School at the University of Minnesota.

MISSOURI

Chamber of Commerce Honors Nobel Prize Winners.—St. Louis, the home of more Nobel Prize winners in the field of science than any other city in the world, paid high tribute to these five eminent residents November 30 at a testimonial dinner tendered by the St. Louis Chamber of Commerce at the city's Hotel Jefferson. Nobel Medal winners who were honored were Arthur H. Compton, chancellor of Washington University; Edward A. Doisy, Sc.D., director of the department of biochemistry at St. Louis University, and three scientists at Washington University: Dr. Joseph Erlanger, professor emeritus of physiology; Drs. Carl F. Cori and Gerty T. Cori, man and wife team of biochemistry professors. Also honored was Frank C. Rand, who was awarded a citation and honorary membership in the American Hospital Association at the organization's convention last September as "an outstanding benefactor of health and hospitals." He is chairman of the board of International Shoe Company in St. Louis. Those paying tribute at the dinner included business leaders, scientists, educators, physicians and officers of the American Medical Association, including Dr. Morris Fishbein, Editor of The Journal, Dr. Roscoe L. Sensenich, South Bend, Ind., President, and Dr. Elmer L. Henderson, Louisville, Ky., Chairman of the Board of Trustees. New York City has two Nobel winners in the field of science, Boston three, Princeton, N. J., two, and various other cities, but one. St. Louis has five, and a sixth, Dr. Herbert S. Gasser of New York, won the coveted award for work done in St. Louis. Dr. Compton won the 1927 award in physics, Dr. Doisy in 1943 in medicine and physiology, Dr. Erlanger and Dr. Gasser in 1944 in medicine and physiology and the Coris in 1947 in the same field. Another native St. Louisan, now a citizen of England, Thomas S. Eliot, won the award in literature just recently, the thirty-third person born in the United States to receive the award.

MONTANA

Study of Encephalitis.—A study conducted at the U.S. Public Health Service Rocky Mountain Laboratory in Hamilton is being made to trace the exact species of mosquito presumably responsible for transmitting the disease to man. The highest incidence of encephalitis since 1938 has been found in North Dakota and adjacent parts of Minnesota, South Dakota, Montana and the Canadian provinces of Manitoba and Saskatchewan. In 1941 more than 3,000 persons were attacked by the disease in this area. The Public Health Service will endeavor to determine the incidence of human infection as accurately as possible.

NEW YORK

Rehabilitation Center for Alcoholic Addicts.—The formal opening of the University of Buffalo Rehabilitation Center, Clinic and Information Bureau for the diagnosis, treatment and reclamation of persons with chronic alcoholism was held December 2. Dr. Kenneth Goldstein, Buffalo, is medical director of the center, which will function in close cooperation with the Edward J. Meyer Memorial Hospital and other Buffalo area hospitals. The center has been made possible through joint efforts of the School of Medicine, the Erie County Medical Society and the profession at large, the state departments of health and mental hygiene, the Erie County Health Department, the Buffalo area hospitals and other local groups. Income will come largely from both national and state health department funds. Among the purposes of the center are reduction of incidence of chronic alcoholism through public educational methods, provision of adequate facilities for medical and institutional care and acquisition of further information regarding the clinical, physiologic and sociologic aspects of alcoholism through inauguration of adequate research studies. A fee of $10 a patient will be charged unless the patient's social credit rating determines that he cannot pay. Persons may be referred by their physicians or may come without referral.

New York City

Serving More Than Fifty Years.—A group of doctors who have practiced in or about New York for fifty years or more were honored at ceremonies December 7 marking the fiftieth anniversary of the merging of the former Bellevue Hospital Medical College into New York University College of Medicine. In attendance were more than fifty doctors who were undergraduates of one of the two schools during the years immediately preceding or following the merger, as well as officials of Bellevue Hospital, the city's Department of Hospitals and members of the faculty and administration of the New York University-Bellevue Medical Center.

Joint Meeting.—The Metropolitan Chapter of the Association of Military Surgeons of the United States and the New York Academy of Medicine will meet jointly at the Academy January 31 for the following program:

Major General Raymond W. Bliss, Washington, D. C., Military Responsibility for Civilian Health in War.
Vice Admiral Ross T. McIntire, Washington, D. C., American Red Cross National Blood Program.
Edwin J. Cohn, Cambridge, Mass., Fractionation of Blood.
Louis K. Diamond, Boston, The *Rh* Factor.
Colonel Elbert DeCoursey, Washington, D. C., Effects of Atomic Radiations on Blood-Forming Elements.

Edwin Smith Papyrus Presented to Academy.—Presentation of the Edwin Smith Papyrus was made December 2 to the New York Academy of Medicine by Dr. Fenwick Beekman, president of the New York Historical Society, and Mr. Sidney Davidson, chairman of the Governing Committee of the Brooklyn Museum. The papyrus, acquired by the Brooklyn Museum from Egyptian collections of the Historical Society, had been lodged with the Brooklyn Museum for over ten years. The society and museum decided that, in view of the outstanding accomplishments of the New York Academy of Medicine and the eminent position which its library holds, the academy should be custodian of this famous papyrus, estimated to be 5,000 years old. It was discovered and purchased in 1862 by Edwin Smith, who was probably the first American citizen to have studied the Egyptian language. After his death in 1906, the papyrus was translated by the late James H. Breasted of the University of Chicago. The contents deal with wounds and injuries of the face, neck and spine. The author follows a regular plan in his presentation of each surgical subject: first, a name for the injury; then the result of his examination followed by a diagnosis, and, finally, the appropriate treatment. Both the original papyrus and a considerable stock of the two printed volumes, the translation and a facsimile, were presented to the academy. Much of the beginning and the end of the papyrus is missing.

OHIO

University News.—A department of preventive medicine, which would cover public health, nutrition and industrial hygiene, has been established by the Ohio State University College of Medicine, Columbus. In addition to coordinating the instruction of medical students in the three fields, the program will emphasize health conservation as well as the control of disease.

Public Relations and the Doctor's Receptionist.—The Ohio State Medical Association, Department of Public Relations, has developed a 14 page booklet entitled "Date With the Doctor: Some Helpful Hints for His Receptionist." It is designed to point out public relation implications of the work of a receptionist, and material is attractively presented. Copies may be obtained from the association's office at 79 East State Street, Columbus 15.

PENNSYLVANIA

Central Blood Bank.—Plans for establishing a Red Cross Regional Blood Center for Philadelphia and vicinity have been approved by the Philadelphia County Medical Society, the Hospital Council of Philadelphia, the director of public health and the medical societies in Bucks, Chester and Delaware counties following nearly two years of planning by members of the medical profession and the Red Cross. The center probably will open shortly after January 1 in the Red Cross headquarters. Bloodmobiles staffed with doctors, nurses and technicians, and equipped to set up stations on the spot, will travel to outlying sections on regular schedu' [illegible] present plans, hospitals in Philadelphia and [illegible] will eventually be supplied with blood from the center. Blood will be supplied free by the Red Cross and its donors; the only charge to be made to the patient will be one by the physician or hospital for professional services in administering the blood.

Philadelphia

Gifts to Women's College.—The Women's Medical College, Philadelphia, has been named the beneficiary of three legacies, two of alumni: $47,000 by the will of the late Dr. Margaret J. Delmore, 1899, the income of which is to be used for scholarships; $17,000 by the will of the late Dr. Grace W. Sherwood, 1904, for scholarship purposes, and a gift of $5,000 from a trust fund of Redwood F. Warner.

Lankenau Hospital to Move.—Lankenau Hospital, a city landmark for eighty-eight years, has purchased a new site on a 92 acre tract at City Line and Lancaster Avenue in Overbrook. The hospital is coordinating its plans with the program of the Hospital Planning Agency of the Citizens Conference on Hospital Capital Requirements. No definite date has been set to begin construction on the new building. Trustees of the hospital are reported to have said that the decision to move the hospital was influenced by the concentration of fourteen hospitals within a mile of its present site and by the trend toward decentralization. In its new location the hospital will be able to serve important parts of west Philadelphia, Delaware and Montgomery counties.

VIRGINIA

State Medical Election.—The Medical Society of Virginia recently installed Dr. M. Pierce Rucker, Richmond, as president and chose Dr. Walter C. Caudill as president-elect for the coming year.

Dr. Lehman Honored.—Dr. Edwin P. Lehman, who has been on the faculty of University of Virginia since 1928, was recently honored by former students, residents and house officers on completion of twenty years as professor of surgery and gynecology. Dr. Lehman is a graduate of Harvard University Medical School, Boston, was an officer in the Army Medical Corps overseas during World War I and was teaching surgeon at Washington University School of Medicine, St. Louis, before he went to the University of Virginia.

WYOMING

Offer Training in Psychiatry.—The director of the Wyoming State Department of Public Health, Dr. Franklin D. Yoder, Cheyenne, is interested in corresponding with a Wyoming physician interested in the field of neuropsychiatry. The state department has funds with which to train physicians in postgraduate specialty training. Dr. Yoder is interested in developing a mental hygiene program in the public health department, and this would depend on the availability of specially trained persons. There are said to be no certified specialists in psychiatry in private practice in the state.

GENERAL

Fellowship Available.—Radcliffe College invites applications for the Helen Putnam Fellowship for Advanced Research, which is open to postdoctoral fellows in the field of genetics or of mental health. The stipend will be $2,600 a year, with possibility of renewal. Application blanks may be obtained from the secretary of the Graduate School, Radcliffe College, Cambridge, Mass. Completed applications should be returned not later than April 1, 1949.

Incidence of Poliomyelitis.—A total of 524 cases of poliomyelitis was reported by the U. S. Public Health Service for the week ending November 27, as compared with 651 the previous week, 366 for the corresponding week in 1946 and a five year median of 221 for the week. Of interest is the late persistence of the disease in California, where 192 cases, or more than one third of the total, were reported for the week. The next highest figures were for South Dakota, 59 (65 last week), and Minnesota, 27 (45 last week). The total to date is 26,216, as compared with 24,261 for the corresponding period of 1946, and a five year median of 13,102 for the period. The total to date this year now exceeds the total for the entire year 1946 (25,698, final figure, total from the monthly reports).

College of Physicians Fellowships.—The American College of Physicians has appointed eight young physicians to research fellowships in medicine for the year beginning July 1949. The recipients and their studies are James K. DeVore, Cleveland, determination of action of adrenal steroids in patients with hypertension; Stefan S. Fajans, Ann Arbor, Mich., the physiologic mechanisms capable of stimulating or depressing the islets of Langerhans; Horace W. Gerarde, Rockford, Ill., the histochemistry of certain liver diseases; John C. Laidlaw, Toronto, Canada, continuation of studies on the metabolism of cholinesterase inhibitors in regard to myasthenia gravis; James Metcalfe Jr., Pigeon Cove, Mass., investigation of the dynamics of circulation; Samuel M. Peacock Jr., Bryn Mawr, Pa., cytochemical studies of nervous tissues during growth and other physiologic activity; Jack L. Strominger, St. Louis, the microchemistry of brain tissue, and Edgar Woody Jr., Nashville, Tenn., continuation of studies on the combined effect of potassium iodide and streptomycin in tuberculosis.

The Five Leading Causes of Death.—The U. S. Public Health Service reports that for 1947 the crude death rate in the United States was 10.1 per 1,000 population as compared with 10.0 in 1946. The five leading causes of death and the number of deaths caused by each were: heart diseases (460,580), malignant tumors (189,811), intracranial lesions of vascular origin (131,039), nephritis (80,288) and accidents excluding motor vehicle (66,882). The number of deaths from heart diseases increased to 31.9 per cent of the total number of deaths as compared to 30.8 per cent in 1946. While deaths from other chronic diseases increased, the mortality from the major infectious diseases set new low records during 1947. The number of deaths from poliomyelitis and polioencephalitis (580) and measles (472) were the third and second lowest, respectively, ever recorded for the United States. The number of deaths from whooping cough rose from the record low of 1,241 in 1946 to 1,954 in 1947. The deaths from pneumonia and influenza (combined) decreased from 62,324 to 61,836 in 1937, and those from tuberculosis decreased from 59,011 to 48,064. Deaths from motor vehicle accidents decreased from 33,411 in 1946 to 32,697 in 1947. This was the first decrease in the annual number of deaths due to this cause since 1943. However, deaths due to other types of accidents rose from 64,622 in 1946 to 66,882 in 1947. Fewer maternal deaths associated with pregnancy and childbirth (4,978) occurred than in 1946 (5,153), despite the large increase in the number of births. Deaths from diabetes mellitus increased to 37,515, an increase of 2,784 over the number for 1946. However, deaths from nephritis (80,288) were 1,413 fewer than in the previous year. All rates shown are crude death rates, and all figures shown are exclusive of deaths among armed forces overseas.

CORRECTION

Tuberculin Allergy.—In an editorial by this title in The Journal, Nov. 13, 1948, page 823, reference was made to research by several investigators including that of A. B. Stavitsky which, the latter states, is misinterpreted. Dr. Stavitsky writes that he never has transferred tuberculin hypersensitivity from tuberculous guinea pigs by a massive transfer of whole blood. These animals, he writes, were given injections of heat-killed tubercle bacilli and were tuberculin sensitive but not tuberculous. Dr. Stavitsky states also that he never expressed the opinion that circulating lymphocytes in this whole blood were responsible for this transfer. What he said was as follows: "The positive results employing suspensions containing about 95 per cent lymphocytes are indicative of the possible preeminence of this cell in the transfer of sensitivity. The specific lysis of a portion of small mature lymphocytes from blood or spleen of tuberculous mice and guinea pigs upon contact with tuberculin may be related to the ability of lymphocytes to transfer sensitivity."

Dr. Stavitsky's name was misspelled in the body of the editorial and in the footnote. His name is spelled as it appears in this correction.

Marriages

Theodore Crandall Alford Jr., Washington, D. C., to Miss Patricia Anne Tully at Fort Myer, Va., October 12.

Benton McQueen Montgomery, Wilmington, N. C., to Miss Inge Schulla of Salzburg, Austria, September 27.

Aubrey Robert Furnas Jr., Jacksonville, Fla., to Miss Mary Elizabeth McGauley of Palatka, September 26.

Mark Samuel Reed, Shamokin, Pa., to Miss Marsha J. Bretthauer at Muhlenberg, Pa., October 23.

Carlton Allen Keck, Urbana, Ill., to Miss Betty Ratcliff Gray of Shreveport, La., October 23.

Wilfred Thomas Small, Milton, Mass., to Miss Muriel Y. Gratton at Pittsfield, September 25.

Floyd R. Sanders, Decatur, Ga., to Miss Marion T. Rutland of Atlanta, recently.

Deaths

Stuart McGuire ⊕ emeritus professor of surgery at the Medical College of Virginia, Richmond, died at his home October 27, aged 81, of pneumonia. Dr. McGuire was born in Staunton, Sept. 16, 1867. After graduation from the University of Virginia Department of Medicine in Charlottesville in 1891, he took postgraduate work in New York and then began his professional career in Richmond, where he was associated with his father, the late Dr. Hunter Holmes McGuire. A short time later he became a member of the faculty of University College of Medicine, where for many years he held the chair of principles of surgery. After the death of his father in 1900, Dr. McGuire was elected to the chair of clinical surgery and carried on the famous "Saturday Surgical Clinic." In 1905, when elected to the presidency of the University College of Medicine, he took an active part in the movement which led to its merger with the Medical College of Virginia, which he served as president from 1914 to 1925. At the time of his death he was emeritus professor of surgery, member of the executive committee and chairman of the board of visitors, which in 1930 established the Stuart McGuire Lectures in recognition of his services to the college, to medical education and to surgery. Dr. McGuire was a member of the House of Delegates of the American Medical Association in 1903, 1904, 1906, 1907 and 1908. He was past president of the Richmond Academy of Medicine, Medical Society of Virginia, Tri-State Medical Association, Southern Surgical and Gynecological Association and the Southern Medical Association. In 1918 he went to France as chief surgeon of the Medical College of Virginia Unit (Base Hospital number 45), of which he was commanding officer. He was awarded the French Medaille d'Honneur, the Distinguished Service Medal and other decorations. He was head surgeon of St. Luke's Hospital and on the staff of the Memorial Hospital, Richmond. He received the LL.D. degree from Richmond College in 1916. Dr. McGuire was the author of "Principles of Surgery," published in 1908, and "The Profit and Loss Account of Modern Medicine," published in 1915.

Clarence Morton Trippe ⊕ Asbury Park, N. J.; born in Versailles, N. Y., Sept. 23, 1884; North Carolina Medical College, Charlotte, 1911; Columbia University College of Physicians and Surgeons, New York, 1916; specialist certified by the American Board of Psychiatry and Neurology, Inc.; fellow of the American College of Physicians; at one time practiced in Charlotte, N. C., where he was on the staffs of Presbyterian, St. Peter, Good Samaritan and Mercy hospitals; formerly affiliated with the Vanderbilt Clinic in New York and Monmouth Memorial Hospital in Long Branch; at one time attending neuropsychiatrist for the U. S. Public Health Service War Risk Insurance, U. S. Veterans Bureau and the Veterans Administration Facility in Lyons; died in Good Samaritan Hospital in West Palm Beach, Fla., August 25, aged 63.

Andrew Baptiste Rivers ⊕ Rochester, Minn.; born in Rolling Stone, Minn., Dec. 10, 1894; John A. Creighton Medical College, Omaha, 1917; associate professor of medicine at the (Mayo Foundation) University of Minnesota Graduate School; specialist certified by the American Board of Internal Medicine; member of the American Medical Association, Central Society for Clinical Research and the American Gastroenterological Association; fellow of the American College of Physicians; served in the U. S. Navy during World War I; consultant in medicine at the Mayo Clinic; died October 3, aged 53, of coronary thrombosis.

Frederick Bryan Wishard ⊕ Anderson, Ind.; born in Teheran, Persia, Aug. 24, 1894; Indiana University School of Medicine, Indianapolis, 1923; member of the American Trudeau Society and the American Association of Industrial Physicians and Surgeons; past president of the Madison County Medical Society and the Eighth District Medical Society; for many years medical director of the Delco Remy Corporation; served during World War I; affiliated with St. John's Hickey Memorial Hospital; died in Ball Memorial Hospital, Muncie, September 23, aged 54, of coronary thrombosis.

Charles Augustus Woodard ⊕ Wilson, N. C.; born in Wilson County, May 11, 1876; University of Virginia Department of Medicine, Charlottesville, 1904; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; served in France during World War I; formerly practiced in Durham, where he was a member of the board of health and was affiliated with Watts Hospital; visiting surgeon, State Hospital, Raleigh; on the staff of Mercy Hospital; chief surgeon and president of the Woodard Herring Hospital, where he died October 5, aged 72, of coronary thrombosis.

Hiram Alonzo Alderman, Portal, Ga.; Atlanta School of Medicine, 1910; member of the American Medical Association; affiliated with the Bulloch County Hospital in Statesboro; died recently, aged 71, of injuries received in an automobile accident.

William Francis Asbury, Campbellsburg, Ky.; University of Louisville (Ky.) Medical Department, 1908; died September 11, aged 74.

Eugene M. Bewley, Tulsa, Okla.; Louisville (Ky.) Medical College, 1889; died September 1, aged 82.

Olav Bohmer, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; died October 5, aged 79, of burns received in an accidental fire in his home.

Herbert Drummond Boyd, Boston; Boston University School of Medicine, 1892; fellow of the American College of Surgeons; past president of the Massachusetts Surgical and Gynecological Society and of the alumni association of the Boston University School of Medicine; affiliated with Massachusetts Memorial Hospitals; died October 11, aged 79, of arteriosclerotic heart disease.

Norman E. Brundage, Rockford, Ohio; Fort Wayne (Ind.) College of Medicine, 1892; formerly health commissioner of Delphos; died in a convalescent home October 8, aged 85.

Joseph Harker Bryan, Asbury Park, N. J.; New York Homeopathic Medical College and Hospital, New York, 1890; member of the American Medical Association; past president of the State Board of Medical Examiners of New Jersey; fellow of the American College of Physicians; one of the original staff of Ann May Hospital, Spring Lake; affiliated with Fitkin Memorial Hospital in Neptune, where he died October 21, aged 82, of acute pancreatitis and bronchopneumonia.

William Dowd Burch, Hughes, Ark.; University of Tennessee College of Medicine, Memphis, 1917; member of the American Medical Association; died in Baptist Hospital, Memphis, Tenn., October 2, aged 67, of diabetes mellitus.

Harvey C. Burson, Denver; Baltimore University School of Medicine, 1896; veteran of the Spanish-American War; died in St. Anthony's Hospital October 22, aged 75, of cerebral hemorrhage.

Prentice E. Bushong, Gainesville, Mo.; National University of Arts and Sciences Medical Department, St. Louis, 1918; died September 4, aged 70, of cerebral hemorrhage.

Charles Henry Carroll, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1906; member of the American Medical Association; affiliated with the Presbyterian Hospital and Allegheny General Hospital, where he died September 5, aged 71, of mesenteric thrombosis and chronic nephritis.

George Crook Clark, Fullerton, Calif.; the Hahnemann Medical College and Hospital, Chicago, 1884; died September 3, aged 85.

Halstead Archard Conner, New Richmond, Ohio; Eclectic Medical Institute, Cincinnati, 1906; died September 16, aged 75.

L. Berry Croley, Williamsburg, Ky.; Hospital College of Medicine, Louisville, 1902; member of the American Medical Association; member of the board of education and the board of directors of the First National Bank; died September 28, aged 72, of coronary occlusion.

Leon Festus Ferguson, Greenwood, Miss.; University of Louisville (Ky.) Medical Department, 1905; died in Greenwood Leflore Hospital October 7, aged 72, of chronic cardiovascular disease.

Jesse V. Ferrel, Louisburg, Kan.; Physio-Medical College of Indiana, Indianapolis, 1897; at one time on the staff of the Trinity Lutheran Hospital, Kansas City, Mo.; died October 5, aged 76.

Stella Compton Fisher, Camden, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1916; member of the American Medical Association; on the staff of Cooper Hospital; died September 28, aged 62, of coronary thrombosis.

Sidney Jay Furst ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1908; affiliated with Morrisania City and St. Elizabeth's hospitals; died in Lutheran Hospital September 9, aged 66, of toxic myocarditis and pneumonia.

John Sterling Geatty ⊕ New Windsor, Md.; University of Maryland School of Medicine, Baltimore, 1906; past president of the Carroll County Medical Society; president of the New Windsor State Bank; died September 17, aged 66.

Joseph Herman Gettinger, New York; Cornell University Medical College, New York, 1903; member of the American Medical Association; past president of the Bronx County Medical Society; emeritus director of pediatrics at the Bronx Hospital; died October 23, aged 74, of arteriosclerotic heart disease.

James Thomas Green, Woodway, Va.; Chattanooga (Tenn.) Medical College, 1902; died recently, aged 69.

Arthur Charles Gronwold, Chicago; Bennett Medical College, Chicago, 1906; for many years on the staff of the Norwegian American Hospital; died October 10, aged 66.

Dale O. Groves, Simla, Colo.; Central Medical College of St. Joseph, Mo., 1903; member of the American Medical Association; died October 12, aged 67.

Alonzo H. Hall, Niantic, Ill.; College of Physicians and Surgeons of Chicago, 1885; died in the Decatur and Macon County Hospital, Decatur, October 6, aged 88, of pneumonia.

Harvey Wesley Hartman, Keyport, N. J.; College of Physicians and Surgeons, Baltimore, 1904; for many years county physician; served during World War I; died in the Riverview Hospital, Red Bank, October 8, aged 67, of coronary thrombosis.

Lawton Mervale Hartman, Jr., ⊕ York, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1902; an Affiliate Fellow of the American Medical Association; fellow of the American College of Physicians; served during World War I; past president of the York County Medical Society; for many years on the staff of York Hospital; died October 6, aged 69.

Albert Benjamin Herrick Jr., Santa Rosa, Calif.; Oakland College of Medicine and Surgery, 1913; member of the American Medical Association; died recently, aged 60, of heart disease.

Milton P. Hill, Baltimore; Baltimore Medical College, 1906; member of the American Psychiatric Association; served on the staff of Mount Hope Retreat; died October 9, aged 64, of cerebral hemorrhage.

William B. Holdship, Ubly, Mich.; Saginaw Valley Medical College, Saginaw, 1902; member of the American Medical Association; past president of the Huron County Medical Society; past president of the village and the board of education; affiliated with Hubbard Memorial Hospital in Bad Axe, where he died September 30, aged 72, of heart disease.

Zimri G. Houser, Eudora, Kan.; University Medical College of Kansas City, Mo., 1908; died in the Lawrence (Kan.) Memorial Hospital September 8, aged 74, of periarteritis nodosa and abscess of the kidney.

Charles Marion Hunter ⊕ Sedro Woolley, Wash.; Medico-Chirurgical College of Philadelphia, 1915; served with the regular army during and after World War I; affiliated with Memorial Hospital; died August 30, aged 57, of nephritis and hypertension.

Philip Williams Hunter ⊕ York, S. C.; Medical College of the State of South Carolina, Charleston, 1911; for service with the British Army during World War I was awarded the British Military Cross; died September 29, aged 63, of coronary thrombosis.

Samuel Haimes Jessurun ⊕ Newark, N. J.; College of Physicians and Surgeons, Baltimore, 1900; at one time on the staffs of Mount Sinai and Sydenham hospitals in New York; died in Beth Israel Hospital September 18, aged 70, of leukemia.

Philip Jerome Jordan, San Jose, Calif.; Stanford University School of Medicine, San Francisco, 1938; member of the American Medical Association and the American College of Allergists; specialist certified by the American Board of Otolaryngology; affiliated with the San Jose, Santa Clara County and O'Connor hospitals; died September 1, aged 37.

Thomas A. Key, Chattanooga, Tenn.; Meharry Medical College, Nashville, 1907; died August 26, aged 71.

George Alexander Kilpatrick, Los Angeles; Washington University School of Medicine, St. Louis, 1904; at one time practiced in McAlester, Okla., where he had been president of the Pittsburg County Medical Society and on the staffs of St. Mary's and Albert Pike hospitals; fellow of the American College of Surgeons; died recently, aged 66.

Roy Stanley Lanterman, Glendale, Calif.; Baltimore University School of Medicine, Baltimore, 1893; formerly county coroner; died September 8, aged 79.

Thurman Holmes Lautenschlager, Santa Barbara, Calif.; Ohio-Miami Medical College of the University of Cincinnati, 1912; served during World War I; member of the American Association of Industrial Physicians and Surgeons; died September 25, aged 60.

William Cooper Le Compte ⊕ Bristol, Pa.; Medico-Chirurgical College of Philadelphia, 1897; veteran of the Spanish-American War; served overseas during World War I; formerly member of the Bristol borough school board; for a time medical inspector of the public schools; died September 16, aged 73, of pernicious anemia and arteriosclerosis.

George Lenz ⊕ Gloversville, N. Y.; Albany (N. Y.) Medical College, 1900; fellow of the American College of Surgeons; served as a member of the board of health of Gloversville; affiliated with the Nathan Littauer Hospital, where he died October 18, aged 73, of cerebral hemorrhage.

Ludvig Reinhart Lima ⊕ Montevideo, Minn.; Minneapolis College of Physicians and Surgeons, 1903; affiliated with the Montevideo Hospital; died September 4, aged 71, of coronary occlusion.

William Little, Sherburne, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1894; member of the American Medical Association; for many years health officer and president of the board of education; affiliated with the Utica (N. Y.) Memorial Hospital and Chenango Memorial Hospital, Norwich; died October 19, aged 82, of carcinoma of the liver and large intestine.

John Riley Loftis Sr., Pocahontas, Ark.; University of Nashville (Tenn.) Medical Department, 1900; member of the American Medical Association; died September 15, aged 73, of coronary thrombosis.

Joseph W. Love, Nevada, Mo.; American Medical College, St. Louis, 1896; member of the American Medical Association; affiliated with Nevada City Hospital; died in Fort Scott, Kan., October 7, aged 79, of cerebral hemorrhage.

Annie Galloway Lyle, San Francisco; Johns Hopkins University School of Medicine, Baltimore, 1902; died in Franklin Hospital October 7, aged 78.

Frank M. McHugh ⊕ Salt Lake City; Louisville (Ky.) and Hospital Medical College, 1908; past president of the Utah State Medical Association and Salt Lake County Medical Society; served in France during World War I; for many years member of the city board of health; died October 9, aged 61, of coronary thrombosis.

Harlen MacMullen, Manistee, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1905; member of the American Medical Association; fellow of the American College of Surgeons; formerly councilor of the ninth district of the Michigan State Medical Society; served during World War I; for many years affiliated with Mercy Hospital and Sanitarium; died October 6, aged 68, of cerebral hemorrhage and diabetes mellitus.

Lee H. Mann, Columbus, Ohio; Columbus Medical College, 1883; first mayor of Linden Heights; died in Jewish Hospital, Louisville, Ky., October 2, aged 87, of heart disease.

Oscar Francois Marcotte, Topeka, Kan.; College of Physicians and Surgeons, Medical Department Kansas City University, 1901; member of the American Medical Association; formerly county coroner; associated with Christ and St. Francis hospitals; died September 23, aged 74, of cerebral hemorrhage and paraplegia.

Albert Rankin Martin ⊕ Chicago; Rush Medical College, Chicago, 1892; an Associate Fellow of the American Medical Association; for many years affiliated with St. Mary of Nazareth Hospital; died in Wilmette, Ill., October 13, aged 86.

Hilmar George Martin ⊕ Milwaukee; Johns Hopkins University School of Medicine, Baltimore, 1919; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; past president of the Milwaukee Oto-Ophthalmic Society; served during World War I; died October 5, aged 55, of chronic nephritis.

Elmer Lincoln Mather, Akron, Ohio; Starling Medical College, Columbus, 1892; member of the American Medical Association; also a lawyer; served on the staffs of the City and People's hospitals; died in St. Thomas Hospital October 8, aged 79, of carcinoma of the prostate with metastases.

Edward Meadow ⊕ Miami, Fla.; Loyola University School of Medicine, Chicago, 1935; affiliated with the Biscayne Hospital, where he was one of the founders and where he died October 10, aged 39, of coronary occlusion.

James Morgan Meehan, Buffalo; Tufts College Medical School, Boston, 1917; affiliated with the Lafayette General Hospital; died in the Buffalo General Hospital October 7, aged 54, of coronary thrombosis.

Warren Garfield Murray ⊕ Dixon, Ill.; Ohio Medical University, Columbus, 1906; member of the American Psychiatric Association; past president of the American Association on Mental Deficiency; superintendent of Dixon State Hospital; died in the Mayo Clinic, Rochester, Minn., October 13, aged 66, of chronic myocarditis.

Nathaniel Read Norton ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1894; formerly clinical professor of diseases of children at his alma mater; at one time on the faculty of Cornell University Medical College; served as consulting physician at the Northern Westchester Hospital in Mount Kisco and attending physician at Babies Hospital; died in St. Luke's Hospital October 1, aged 77, of carcinoma of the prostate and hypertensive cardiovascular disease.

Ellen Pembroke O'Flaherty ⊕ Hartford, Conn.; Cornell University Medical College, New York, 1901; formerly vice president of the board of health; affiliated with St. Francis and the J. J. McCook Memorial hospitals; died October 6, aged 71, of coronary thrombosis.

John Alfred O'Regan ⊕ New York; McGill University Faculty of Medicine, Montreal, Canada, 1916; assistant professor of clinical obstetrics and gynecology at the Cornell University Medical College; fellow of the American College of Surgeons; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; associated with the New York Hospital; died October 6, aged 55.

Frederick Marcellus Poindexter, Dillon, Mont.; Northwestern University Medical School, Chicago, 1902; member of the American Medical Association; for many years city and county health officer; served during World War I; on the staff of Barrett Hospital, where he died August 30, aged 73, of chronic myocarditis.

John Henning Porter, Andrews, S. C.; Jefferson Medical College of Philadelphia, 1922; member of the American Medical Association; formerly mayor of Andrews; for many years member of the state house of representatives from Georgetown County; died in the McLeod Infirmary, Florence, September 17, aged 54.

Carl Pototzky, New York; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1903; member of the American Medical Association; served on the staffs of Sea View Hospital in Staten Island and Mount Sinai Hospital; died September 21, aged 68, of heart disease.

Herman L. Price, Taylorsville, N. C.; North Carolina Medical College, Charlotte, 1914; for many years chairman of the school board; served as county physician; died September 21, aged 58, of heart disease.

Fanny Radom, West Hartford, Conn.; Woman's Medical College of Pennsylvania, Philadelphia, 1912; one of the founders of Mount Sinai Hospital in Hartford; died September 12, aged 69, of acute coronary thrombosis.

James M. Powell, Wells, Texas (licensed in Arkansas in 1909); died August 1.

William Walter Reich ⊕ Berkeley, Calif.; Stanford University School of Medicine, San Francisco, 1929; served on the faculty of his alma mater; fellow of the International College of Surgeons; member of the council of Alameda County Medical Association; member of the Pan American Medical Association; chairman of the 1948 campaign in Berkeley of the American Cancer Society; affiliated with Herrick Memorial, Alta Bates and Children's hospitals; died September 19, aged 49, of coronary occlusion.

Chester Elwood Stephenson, Indianapolis; Medical College of Indiana, Indianapolis, 1903; died September 22, aged 71.

Orris Martin Thompson ⊕ Bloomington, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; served during World War I; died September 2, aged 70, of coronary occlusion and hypertension.

Leonard Dober Thomas, Alamo, Tenn.; Meharry Medical College, Nashville, 1913; died in Carbondale, Ill., August 21, aged 58, of myocarditis and cardiovascular renal syndrome.

August Trapold, Wilkes-Barre, Pa.; Medico-Chirurgical College of Philadelphia, 1891; fellow of the American College of Surgeons; affiliated with the Mercy Hospital, where he died September 12, aged 81, of fracture of the ninth dorsal vertebra received in a fall.

Henry Brown Turner, Darien, Conn.; Johns Hopkins University School of Medicine, Baltimore, 1926; died October 5, aged 49.

Frank Rudolph Urban ⊕ Medical Director, Captain, U. S. Navy, Riverside, Ill.; University of Illinois College of Medicine, Chicago, 1933; entered the U. S. Navy on Aug. 9, 1932; served during World War II and received the Purple Heart and Bronze Star Medal; attached to the Naval Air Station, Norfolk, Va.; died in Norfolk September 14, aged 42, of coronary occlusion.

Luther Lee Vann, Mars Hill, N. C.; Jefferson Medical College of Philadelphia, 1890; died in Asheville, September 19, aged 83, of cerebral hemorrhage.

William McCoy Van Patten, Seattle; University of Pennsylvania Department of Medicine, Philadelphia, 1893; veteran of the Spanish-American War; served during World War I; formerly associated with the Veterans hospitals in Boise, Idaho, and Retsil, Wash.; died in the U. S. Marine Hospital September 21, aged 80, of cerebral thrombosis.

James Blaine Vedder ⊕ Marshfield, Wis.; Northwestern University Medical School, Chicago, 1905; past president and vice president of the Wisconsin Society of Obstetrics and Gynecology; served overseas during World War I; member of the school board; affiliated with St. Joseph's Hospital, where he died September 12, aged 65, of cerebral thrombosis.

Morton Josiah Vogt, White City, Fla.; Maryland Medical College, Baltimore, 1912; died in Grand Gorge, N. Y., August 11, aged 60, of heart disease.

Walter Charles Henry Weigner ⊕ Providence, R. I.; Tufts College Medical School, Boston, 1929; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association and the New England Society of Psychiatry; served on the staffs of the Butler and Providence Lying-In hospitals; died in Rumford, October 5, aged 42, of coronary occlusion.

P. J. Wieg, Strum, Wis.; Milwaukee Medical College, 1901; died in the Luther Hospital, Eau Claire, September 25, aged 74, of carcinoma of the liver and large intestine.

Robert M. Wood, Chaplin, Ky.; Hospital College of Medicine, Louisville, 1901; died in the SS. Mary and Elizabeth Hospital, Louisville, September 16, aged 69, of a fractured skull as the result of a fall.

Ambrose Miller Wylie ⊕ Chester, S. C.; Medical College of the State of South Carolina, Charleston, 1903; past president of the Chester County Medical Society; founder and president of the Chester Sanatorium, now known as Chester County Hospital; died September 22, aged 72, of carcinoma of the colon.

Frederick Hyder Yates, Decatur, Ill.; Barnes Medical College, St. Louis, 1907; member of the American Medical Association; served during World War I; died in St. Mary's Hospital August 19, aged 65, of hypertension and cerebral hemorrhage.

Russell Glenn Zimmerman, Berne, Ind.; Indiana University School of Medicine, Indianapolis, 1932; member of the American Medical Association; formerly surgeon for the Chrysler Corporation in Detroit; died in Lima, Ohio, September 24, aged 45, of cerebral hemorrhage.

DIED WHILE IN MILITARY SERVICE

Daniel Richard Skudowitz, New York; L.R.C.P., Edinburgh, L.R.C.S., Edinburgh, and L.R.F.P. & S., Glasgow, Scotland, 1939; interned at Lincoln Hospital; began active duty as a first lieutenant, medical corps, Army of the United States, in April 1942; promoted to captain in March 1943 and major in May 1945; died in Munster, Germany, July 24, 1945, of injuries received in an automobile accident.

Max Fackrell Day, Bountiful, Utah; Temple University School of Medicine, Philadelphia, 1943; interned at the Salt Lake County General Hospital in Salt Lake City; lieutenant (jg) medical corps, U. S. Naval Reserve; killed by lightning in Schofield, July 1, 1946, aged 27.

Arthur Miller Barrett ⊕ Passed Assistant Surgeon, Lieutenant, U. S. Navy, Winnetka, Ill.; Jefferson Medical College of Philadelphia, 1938; interned at the U. S. Naval Hospital in Mare Island, Calif.; appointed an assistant surgeon in the medical corps of the U. S. Navy with the rank of lieutenant (jg) on July 19, 1938; died Feb. 15, 1945, while a Japanese prisoner of war, aged 33, of malnutrition.

Howard Eugene Sellards ⊕ Lieutenant Colonel, M.C., U. S. Army, Topeka, Kan.; University of Kansas School of Medicine, Kansas City, 1938; interned at St. Luke's Hospital in Kansas City, Mo.; entered the U. S. Army on July 1, 1939; held a permanent rank of captain; on duty with the 91st Photo Reconnaissance Wing during World War II; killed in an airplane accident in Southwest Pacific June 3, 1945, aged 33.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 6, 1948.

The Longest Period of Gestation on Record

A longer period of gestation than previously recorded has been allowed in law courts. A member of the armed forces last cohabited with his wife before going abroad on Aug. 28, 1944. She bore a child on Aug. 12, 1945. He therefore petitioned for adultery, with the length of the gestation period as the chief ground. Suggestions of other evidence of adultery were rejected by the judge. Medical evidence was given that it was not impossible that the husband could be the father of the child, and the judge dismissed the petition. The case was taken to the Court of Appeal, which upheld the judge's decision on the ground that none of the unusual features of the pregnancy was sufficient to impel the court to reject the medical evidence and infer adultery.

This gestation period of 349 days is the longest ever held by an English court to be possible. It supersedes the record of 346 days set up in 1947 in a case which came into court, and is far in excess of the limit allowed in foreign legislation. Periods of gestation beyond 300 days are unusual and are regarded by authorities with suspicion. Cases have been recorded of 315, 323, 324 and 336 days; in the 3 last of these cases the children weighed 12.5, 14 and 16.5 pounds (5,670, 6,350 and 7,484 Gm.) respectively.

Gastroenteritis Flying Squad

The greatest children's hospital in Britain, the National Hospital for Sick Children, Great Ormond Street, London, has made an innovation which is believed to be the first of the kind in the hospitals of the world. It has organized a flying squad consisting of up to five fully trained nurses and one doctor, taken from the team which is working on infantile gastroenteritis, to go to the help of institutions or others who are in difficulties over an outbreak of the disease. The primary object is not to conduct research but to fill any gap in resources for investigation or treatment, and it is hoped that health officers will use the team. Equipment will be carried in a lorry containing drugs, sterilizers and everything needed for transfusions or infusions. Thus the squad is fully equipped to augment existing nursing arrangements or to set up a special unit. Normally the resources of the nearest laboratory will be used for bacteriologic studies, but the lorry contains power-driven centrifuge and other apparatus for simple work of this kind. Thus in isolated areas the unit can work independently of any hospital or institution, providing, if need be, for domiciliary service. The help of the squad, which is prepared to go anywhere, is to be sought through the local health officer or regional hospital board or, when the need is acute, by telephoning the house governor of the National Hospital for Sick Children, Great Ormond Street.

"The Filth We Breathe"

The pollution of the air of our large towns, particularly the manufacturing ones, by the smoke of the domestic grate and the factory chimney, is an unsolved problem. Under the caption "The Filth We Breathe" the *Manchester Guardian*, published in a city where the evil is rampant, writes; "If we realise the quantities of soot, grit, tar, sulphuric acid that go into our lungs with each breath, we are extraordinarily indifferent or fatalistic about it." The National Smoke Abatement Society has published an interim survey of atmospheric pollution. It sent a questionnaire to 1,496 local authorities and received replies from fewer than one half. One in five of those who replied reported their atmosphere as all clear—a statement regarded with some skepticism in view of the widespread dispersion of smoke and acid in the air over Britain. Some residental areas spouting smoke from thousands of domestic chimneys apparently think that this does not count, even though it is generally accepted that at least half our atmospheric pollution comes from this source. What is required is a government survey on a scientific basis. A few local authorities are establishing air-pollution stations with deposit gages and sulfur recorders.

As to prevention, smokeless fuel is expensive but steam-raising plants can be built to consume smokelessly any kind of coal. The domestic fireplace, so dear to the English heart, is a tougher problem. There are enough modern grates to supply every new house, but only one in three has been fitted with these since the war.

Increase of Mule Spinners' Cancer

The Manchester Committee on Cancer is sending to the 1,500 doctors practicing in cotton-spinning towns a booklet on "Mule Spinners' Cancer" by Dr. E. M. Brockbank, a well known teacher of the Manchester School. He states that cancer of the skin is *affecting men spinning cotton on mules in even* greater numbers than a few years ago. The incidence of the disease in 1926 was 1.83 per thousand, but in 1946 it had increased to 2.03 per thousand. He concludes that this increase is due to the greater proportion of spinners in the older age groups. It may be added that this in turn is an example of the increased longevity of our population, which, in combination with the shortage of labor following the war, has led to a prolongation of the working period of life.

TURKEY

(From Our Regular Correspondent)

ANKARA, Oct. 31, 1948.

Autotransfusion in Ectopic Pregnancies

At the recent tenth national medical congress held in Ankara, Dr. Halil Çiray, chief of the obstetric and gynecologic department of the Ankara Model Hospital, reported on his ten years of experience with autotransfusion. The report was based on 247 ectopic pregnancies. Autotransfusion was begun in 1938 and during ten years was applied in 134 cases. The patients were between the ages 17 to 44 years. Ectopic pregnancies occurred in the first, in the second to seventh and after the tenth pregnancy. Autotransfusion of 600 to 900 cc. was given to patients with moderate hemorrhages, 1,300 to 1,800 cc. when hemorrhages were serious, and in 2 grave cases 2,200 cc. were given. Of the 134 patients given autotransfusion 6 died, and of 65 patients not given autotransfusion 4 died. Of 247 ectopic pregnancies 188 were tubal abortions, 56 were ruptures and 3 were ovarian. In 131 cases the pregnancies occurred on the right side; 66 occurred in primiparas, 54 in biparas and 127 in multiparas. There were 101 stillbirths; of these 5 were abortions. On admission 137 patients were in a moderately alarming, and 62 in a grave condition. Six patients died before autotransfusion could be given and 4 patients whose condition on admission was critical died in spite of it. In 61 of the 247 cases there was no need for autotransfusion.

The autotransfusions were made by means of the Zank instrument. The abdomen always contained a great deal of blood in ectopic pregnancy ruptures. The peritoneum was opened and the blood was collected in cups with a special instrument and together with the squeezed coagulated blood strained through five layers of gauze into a warm basin containing 3 per cent citrate solution amounting to one tenth of the blood, and often with an additional 20 per cent solution of serum dextrose; it was then immediately injected slowly into the patient's vein. No untoward results were noted, except that in some sensitive patients temporary slight elevation of temperature and chills were observed. In most patients there was a rapid improvement in pulse, and soon after transfusion symptoms of shock disappeared completely.

Since no time is lost in determining the blood groups, searching for the Rh factor, making the Wassermann or Kahn tests, and because of the simplicity of procedure, autotransfusion can under relatively primitive conditions safely be applied in ectopic pregnancies to save the lives of mothers.

Juvenile Cataracts

Dr. Nuri Fehmi Ayberk, chief of the Istanbul-Haidar Pasha Model Hospital eye clinic, has published his seven years' observation on juvenile cataracts. From 1940 to 1947, 792 patients with cataract were admitted to the clinic. Of these, 698 had senile, 64 juvenile and 30 traumatic cataracts. His experiments with the Rotter method lead the author to the conclusion that faulty nutrition and insufficiency or absence of vitamin C are mainly responsible for the development of juvenile cataracts. After a 1 cc. subcutaneous injection of dichlorophenolindophenol in a 1/400 solution the developing blue color should disappear within ten to twelve minutes after the body has attained the normal vitamin C level; if hypovitaminosis exists it takes from thirty to sixty minutes. Among the 64 patients aged 15 to 38 it took 19 to 37 minutes for the Rotter test blue to disappear.

According to Dr. Ayberk faulty nutrition, intoxication, endocrine disturbances and radiations are contributing factors to the cataract pathologic changes. He concludes that juvenile cataracts occur more frequently in rural than in urban communities, that malaria as a contributing factor to the comparatively high ratio of juvenile cataracts should be taken into consideration and that, besides biochemical factors, physical factors also play a role. Dr. Ayberk emphasized the importance of a quick absorption of the degenerated lense tissue and recommends that to insure good vision after the operation iridectomy should be avoided but that if that is not possible the iridectomy should be peripheral only.

Death of Prof. Neshat Omer Irdelp

Senior cardiologist Prof. N. O. Irdelp, who for almost forty years taught at the Istanbul University Medical School, recently died of heart disease at the age of 67. Prof. Irdelp did postgraduate work under Prof. Vaquez of Paris and was the author of textbooks on internal medicine and heart diseases. His library of some ten thousand books he dedicated to the Istanbul University Medical School Library. Dr. Irdelp served two terms as deputy to the National Assembly and was private physician to Turkey's first president, the late Kemal Ataturk.

BUENOS AIRES

(From Our Regular Correspondent)

Nov. 2, 1948.

Congress of Surgery

The Nineteenth Argentine Congress of Surgery was held in October at the Faculty of Medicine in Buenos Aires under the presidency of Dr. Oscar J. Cames, professor of clinical surgery in Rosario, and with the participation of surgeons from Bolivia, Brasil and Paraguay and of Prof. Pierre Bertrand from Paris. The first main subject was "Surgical Treatment of Arterial Hypertension"; Dr. Ed. Braun Menéndez said that sympathectomy is founded on an empiric basis, and still lacks a theoretic basis. He proposed the creation of a permanent committee of physiologists, clinicians and surgeons to study the surgical treatment of arterial hypertension. Dr. A. S. Introzzi said that patients under 40 years of age with good renal function and with minimum lesions of the retina should be operated on. Essential hypertension is the form most indicated for surgical treatment. Technically he is in favor of the combined thoracoabdominal method of Smithwick when the operative condition of the patient is favorable. When these indications are followed strictly there is hope for the successful treatment of this difficult disease. Dr. Pedro Cossio said that the increase of arterial pressure is only a symptom, and not the most important one of the clinical picture. He was skeptical with reference to the future of surgical treatment. Dr. G. von Grolman, who discussed the ophthalmologic manifestations, said that the four classical grades of lesions of the retina must be revised and that surgeons and ophthalmologists must harmonize their opinions so that definite conclusions may be reached.

The subject of the second day was "Intravenous Anesthesia," and the speaker was Dr. Jose C. Delorme. He said that among the barbiturics thiopental sodium is preferred, and that in intraabdominal surgery it must be combined with curare. When it is used by experts its morbidity and mortality are comparable to those of most safe anesthetics. In the discussion the general opinion was that intravenous anesthesia is a notable advance only in experienced hands and when used prudently; otherwise it is a dangerous procedure.

The third main subject, "Treatment of the Congenital Luxation of the Hip," was considered by Drs. A. A. Salvatti (infancy), J. E. Rivarola (adolescents) and J. A. Piqué (adults). Dr. Salvatti insisted that for obtaining real benefit the surgical treatment should be carried out within the first five years of life. Dr. Piqué said that the surgical treatment of older patients gives only imperfect results; pain and claudication do not disappear. Dr. Bertrand, specialist of this disease, gave a special conference on the subject.

The next Congress will be presided over by Dr. Adolfo Landivar, professor of surgery, Medical Faculty of Buenos Aires, and the following subjects will be considered: operative wounds of the biliary tracts and their treatment; surgical splenopathies with the exception of hydatic cyst; coxa vara of the adolescent.

Propylthiouracil

Dr. A. Tachella Costa informed the Argentine Society of Endocrinology that he has treated 60 cases of hyperthyroidism with this substance. The initial dose should be limited to 200 mg. (4 times 50 mg.), the maintaining dose to 25 to 75 mg. per day. The greatest influence is exercised on the basal metabolism, weight, cardiovascular symptoms, asthenia and nervous excitation. The goiter and exophthalmos are not influenced by this medication. The number of leukocytes and neutrophils usually decreases slightly; however, 1 case of sharp reduction with menace of agranulocytosis has been observed; other reactions, such as pruritus or drug fever, have been seen in 5 per cent of the patients treated. Propylthiouracil is useful together with iodine as a preoperative measure. Remissions after treatment have been observed in 60 per cent of the cases. The "immediate reaction in one hour," viz., a diminished metabolic rate after giving the first 50 mg., is still not understood.

Leishmaniosis Cutaneamucosa Americana

Dr. Andrés Cornejo, director, department for skin and venereal diseases of the Hospital del Señor del Milagro in Salta (North Argentine) discussed leishmaniosis cutaneamucosa americana at the National Academy of Medicine of Buenos Aires. He, with the late Dr. Mazza, with whom he collaborated for sixteen years, has described five new forms of this disease: "papulosa gigante," lupus; "nodular cicatrizante no ulcerada"; "lymphangitica," and hypertrophic. The best treatment in the author's experience is with stibophen and chiniofon, adding vitamins, and liver; also with antimony potassium tartrate and potassium iodide (according to the method of Dr. Veintemillas, La Paz, Bolivia). Dr. Cornejo demonstrated forty-six moulages made perfectly, a unique collection of its kind.

Brief Items

Dr. P. O. Wolff addressed the Society of Legal Medicine and Toxicology in an extraordinary session on "Marihuana in Latin America: The Danger Which It Constitutes."

Correspondence

ADEQUATE MEDICAL EXAMINATION IN UNEXPECTED AND VIOLENT DEATHS

To the Editor:—In the concluding paragraph of the editorial entitled: "Medical Science and the Administration of Justice" (THE JOURNAL, November 6, pp. 751-752), the "medical examiner system" is offered as a panacea for all the weaknesses which exist under the coroner "system" in some localities. Throughout the entire article there is no recognition of the fact that competent medicolegal investigations are being made in many jurisdictions where there are coroners who are physicians with special interest and experience in legal medicine or who have such physicians as members of their staffs.

The editorial cites an opinion from the Report of the Committee of the American Medical Association to Study the Relationship of Medicine and Law (THE JOURNAL, June 24, 1944, page 577). However, the author seems to have failed to take cognizance of a comment in that same report (p. 578): "Obviously the name under which the medical investigator operates has little or no bearing on the effectiveness with which his public duties are discharged. If the law requires first that he be professionally competent and second that he have both the authority and the facilities for the conduct of such investigations as are required in the interest of public welfare, the name of his office is inconsequential." It is unfortunate that prejudice has so blinded the sponsors of the medical examiner system to this bit of wisdom that it has failed to influence their consideration of the problems confronting the coroner. The chief source of all the ineptitude lies in the antiquated laws which govern the office in many states.

When I presented the case for the coroner in the debate of the question "The Coroner System vs. the Medical Examiner System"[1] and ever since, I have been pleading for recognition that there are no essential differences between the two. In fact, there is no consistency of a "system" for either one. The ardent proponents of the medical examiner system are in many cases men of ability and position who command merited respect, but all too often they approach the problem with prejudices colored by an awesome respect for the medicolegal institutes of Europe. This fixation of attitude coupled with a lack of understanding of the intricacies of legislative procedures in a democratic country has led to a wanton waste of effort. The coroner system is a democratic institution with its roots deep in American philosophy of government, as contrasted with the medical examiner system, which sprang from bureaucratic and dictatorial governments. If the proponents of the medical examiner system had taken a broader perspective and sought the cooperation of the coroners who were interested in modernizing the office they might have accomplished much through recodification of the laws and in the recognition of forensic medicine as a specialty in its own right. The American Way has always favored improvement through evolution—not revolution.

The proponents of the medical examiner system propound the theory that the medical examination of the deceased person should be the only function of the office. This led to the erroneous conclusion that the coroner should be replaced by a pathologist. There are three fallacies underlying this premise. First is the belief that the medical examination alone and unsupported can furnish the law enforcement agencies with all the information they need. Second, is that the knowledge of pathology (a specialty) qualifies a man as a medicolegal expert (another specialty related to the first but requiring also clinical experience and additional familiarity with legal proceedings). Third is a general lack of understanding of the potential value of the coroner as an agent for legal justice not only in criminal cases but also in establishing civil rights and as a guardian of public health and safety. Few physicians realize that this specialty requires a knowledge of both law and medicine combined with the ability to integrate the involved facts and principles of each; therefore the general view has been obscured with this undue emphasis on one field alone, i. e., medicine.

In the accomplishment of justice it is equally important to determine the mode and manner of death and the cause of death. It has been argued that this is no concern of medicine. Those who are engaged in forensic medicine, whether they bear the title of coroner or medical examiner, know that in proper medicolegal examination there can be no complete separation of the medical and legal implications. The obvious question arises as to who is to take the responsibility for the proper interpretation of a cause of death. For example, in a case in which violence has been reported or is suspected and the death is found to be due to parenchymatous cerebral hemorrhage the proper interpretation is important and requires medical knowledge. On the other hand, consider a case in which the victim was smothered with a pillow and then strung up to appear as suicide by hanging. Had it not been for the thorough examination by an experienced medicolegal expert (Dr. LeMoyne Snyder), the cause of death would no doubt have been reported simply as "asphyxiation." The interpretation logically would have been that the mode was hanging and the manner suicide. However, because the autopsy included the examination of the cricoid cartilage, which showed no premortem injury, Dr. Snyder was able to direct the police to consider this a homicide. A corollary here is that it is necessary that information obtained concerning circumstances surrounding the death should be available to the official conducting the postmortem medical examination. A diagnostician depends on history elicited from the patient which he correlates with his physical findings. Diagnoses made after death require an equal amount of medical knowledge and keenest powers of observation, and certainly one is entitled to what history can be found on investigation. Volumes of examples could be cited to support the statement that there must be one central authority with a knowledge of medicine and an understanding of the legal details involved who can correlate all the facts and findings and so give direction to the law enforcement agents by establishing for them the cause, mode and manner of death. Ascertaining the cause of death is not the sole objective of a medicolegal postmortem examination. Fully as important is the recognition and recording of minute details which may become evidence or clues.

The medical profession as a whole has neglected its social responsibilities, as evidenced in the failure to meet and fulfil this need for the application of expert specialized knowledge of medicine and law.

The editorial calls attention to the possibility of nonrecognition of murder or direction of unwarranted suspicion toward innocent people when the investigation is incomplete or incompetent. Let us also consider the many instances in which a doctor, called in after death, certifies the death as due to natural causes when a thorough investigation by one trained in making diagnoses after death might reveal that death was actually due to violence, suicidal, homicidal or accidental. An erroneous cause of death in each instance carries a different social implication, and volumes could be written on each. I believe that there are many doctors who do not realize how far reaching is the significance of an an accurate determination of the cause in all cases of sudden death; else surely they would not take their responsibility so lightly. Sometimes it seems that the attitude which reigns is: "They are dead; so what does it matter?" I realize that many times a family physician is unduly influenced by the immediate grief of the surviving relatives and fails to consider what constitutes ultimately the greatest good for the greatest number of persons. All too often we hear much later that the deceased had been involved in an accident while at work and it is necessary to determine whether or not that death was due to such an injury in order to effect legal justice for the company and for the estate. Every doctor knows that a medicolegal autopsy performed after exhuming the body is often almost valueless. So, in the final analysis the favor granted by the physician unduly influenced by sentiment turns out to be a true injustice. If suicides were not properly investigated the opportunity would be provided to arrange homicides to appear as suicides. Therefore, when any doctor tries to cover up for the family by failing to report a suicide he is shouldering on himself a neglect of duty to society. Nonrecognition of murder cannot be blamed entirely on the lay coroner. Some of the blame belongs to the improper diagnoses both before and after death, made either intentionally or unintentionally by the otherwise competent physician.

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[1] Gerber, S. R.: Advantage of the Coroner System over That of the Medical Examiner System, read at the Ninety-Third Annual Session of the American Medical Association, Atlantic City, June 12, 1942.

Before we have adequate medical examination of sudden and unexpected deaths throughout the nation we must have the interest and understanding of the entire medical profession aroused to accept their social responsibilities, both as organized groups and as individuals. One group alone with special interest influencing the point of view will never lead to a fair solution of the problems. There must be recognition of forensic medicine as a specialty in its own right and proper training programs instituted. With this background there should be support of proper legislation to grant the needed authority, facilities and compensation. This latter effort calls for close cooperation with the bar associations.

In conclusion I should like to restate that there is no consistency of a system either of the coroners or the medical examiners. The American Medical Association, the state and local medical societies and unaffiliated doctors all have an obligation to society to promote the recognition of the need for adequate medicolegal investigations in all deaths due to violence or which occur suddenly and unexpectedly, the education of competent specialists in this field and the encouragement and support of doctors who are serving society in this manner.

S. R. GERBER, M.D., Coroner,
Cuyahoga County, Cleveland.
Exec. Sec. Treas., National Association of Coroners.

Medical Motion Pictures

FILM REVIEWS

Speech Training for the Handicapped Child. 16 mm., color, sound, 990 feet (1 reel), showing time twenty-five minutes. Produced in 1945 by The University of Illinois, Division of Services for Crippled Children in Collaboration with the Speech Clinics of the University of Illinois, Rockford College and the Illinois State Normal University. Procurable on loan or purchase from The University of Illinois, Division of Services for Crippled Children, 1105 South Sixth Street, Springfield.

This motion picture shows a series of views of the activities connected with speech education in an institution sufficiently equipped with diagnostic and therapeutic devices as well as temporary housing so that a complete, well rounded attack on the patient's problems becomes possible. One sees children with cleft palate, and enough is shown to give the audience a lively appreciation of their problems. Children with brain injuries, especially birth paralysis, are also shown, and the technic for teaching them to relax is well illustrated. The problems of deaf children are outlined and the methods for dealing with their problems are pretty well indicated. While in many previous films of this sort the over-all effect has been that of needless fussing, the present film shows not only the technics but also the need for them. The background is a cheerful one, and the use of color contributes substantially to an appreciation of the thoroughness with which everything is planned. Almost all major types of speech defects are considered in this picture, so that the importance of thorough diagnosis and of training the patient as a whole becomes evident to the audience.

The manner in which the theme is handled, however, is not exactly technical, and the film would be of use mainly for introductory purposes. It could be used, for instance, at the beginning of a course in speech problems in a University. It is not suited to the needs of medical students because it shows so little of the underlying anatomic and neurologic disorders. It does not seem exactly suitable for audiences of physicians or specialists either. Its greatest value would probably be for showing to service organizations and charitable groups when it is desirable to impress such groups with the need of financial support for work of this sort. It might be suited for parent-teachers' associations and church organizations. On the whole, it is an instructive and inspiring film, and will be welcomed by audiences to whose needs it is adapted.

The photography is excellent.

Transthoracic Gastrectomy. 16 mm., color, silent, 935 feet (3 reels), showing time thirty-eight minutes. Prepared in 1948 and procurable on loan from Philip Thorek, M.D., 25 East Washington Street, Chicago 2.

The film shows a transthoracic subtotal gastrectomy for an ulcerating lesion in about the mid portion of the lesser curvature of the stomach. The history of the patient is given and a statement made that by roentgen examination, an ulcerating lesion was found high on the lesser curvature of the stomach and that it could not be determined definitely whether it was a benign or a malignant lesion. The roentgenograms are not shown, nor is any mention made of secretory studies or gastrostomy which may have helped in differentiating between a benign and a malignant lesion. From the position of the lesion as seen during the course of the operative procedure it appears to be in about the mid portion of the lesser curvature of the stomach.

If the ulcer were benign the procedure shown was too much for such a lesion and if it was an ulceration in a cancer the technic that was employed was not good cancer surgery. If there was any question about its being malignant one should have widely removed the portion of the pancreas into which the ulcer had perforated rather than cutting into it and leaving the base on the pancreas. A hemostat was passed several times into the opened ulcerated area, which, if there was a cancer present, would have permitted widespread seeding of the tumor cells. Since only the proximal three fourths of the stomach was removed in the operative procedure it would have been better to perform an esophagogastrostomy rather than an esophagojejunostomy. Preservation of a small amount of stomach makes a great deal of difference in the maintenance of an adequate nutritional state. From the location of the ulcer as seen in the specimen it is believed that it would have been adequately resected by an abdominal approach and the proximal portion of the stomach preserved; this would have been much better for the patient as far as future nutrition is concerned.

The operative technic is excellent. The film could be used to support a lecture or conference on transthoracic gastrectomy from a technical standpoint, but is not suitable for teaching residents, interns or medical students.

The titles are clear and the color photography is excellent. There is considerable "panning," and the use of a tripod would have improved the photographic technic.

SERVICE CHARGE FOR MOTION PICTURES

Beginning Jan. 1, 1949, there will be a service charge of approximately $1.00 per reel (400 feet) for the use of motion pictures procurable from the Film Library of the American Medical Association. This is in addition to the transportation charges.

Requests for a current list of films should be directed to the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10, Ill.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Degree of Skill and Care Required of General Practitioners.—This was an action to recover damages for the alleged negligent conduct of the defendant physician. From a judgment for the plaintiff, the defendant appealed to the district court of appeal, third district, California.

The plaintiff, who was then about 62 years of age, suffered a double comminuted fracture of the lower left leg and was taken to the Buchanan Hospital in Lodi, where the defendant was called to attend him. The leg was placed in a cast after roentgenograms showed the bones to be in alinement. After the application of the cast, additional roentgenograms indicated that, although the leg was in satisfactory position, there had been a slight change in the alinement. During the plaintiff's hospitalization periodic roentgenograms showed the alinement to be progressively changing, so that at the time of the trial the upper fracture had an angulation of approximately 30 degrees and the lower fracture of approximately 5 degrees in the opposite direction; the leg was 1¼ inches (3 cm.) shorter than the right one, and there was atrophy of the muscles and arthritis. The plaintiff testified that, because of the extreme pain caused by this condition, he cannot place his weight on the leg and therefore must use a cane, and, according to the plaintiff's expert witness, this condition has resulted in his total disability as a rancher. The defendant himself admitted that the plaintiff's deformity is permanent and that at the outset of the treatment he had anticipated permanent disability of the degree and in accordance with the results obtained. He further testified that he decided against the use of any traction on the leg because of possible complications and that none was ever used.

The defendant's first contention on appeal was that because the plaintiff's expert witness was not qualified there was prejudicial error in the admission of his testimony as to the standard of care. It was argued that the plaintiff's expert witness was not qualified to testify to the standard of care of a general medical practitioner in the city of Lodi in that he knew no doctors in that city and knew nothing of the facilities available there, his knowledge of professional standards being limited to neighboring communities. The qualifying examination of the witness, said the court, does show that with one exception he knew no doctors in Lodi, although he knew of the facilities of the hospital there, had practiced in nearby communities and at present maintains his office in Oakdale, about 40 miles distant from Lodi. This witness was permitted to testify that standard practice in treating fractures is uniform throughout the state, that the defendant did not follow standard practice when he failed to use any form of traction which was indicated by the progressive angulation of the leg as shown by the roentgenograms, and, furthermore, that he removed the cast prematurely.

In this day of rapid transportation and communication, said the court, there appears to be no reason why enlightened medicine with much of its improved practices and facilities should not be available to all. The defendant testified that he maintains an extensive medical library to which he constantly is adding technical books, that he takes and reads all of the medical journals which include articles on various special subjects, such as orthopedics, that he attends all of the county and state meetings of his profession, participating in all of the lectures that are there given and that on at least one occasion and possibly two he took a one week intensive course on orthopedics at the Univesrtity of California. In other words, nothing appears from his testimony or from the record as a whole which would or did hamper the defendant either by training or available facilities in his diagnosis and treatment of the plaintiff. The defendant's contention would require drawing an arbitrary geographic line separating Lodi from the neighboring towns which the evidence shows are almost identical in regard to the kind of medical services available. In its origin when, because of various and readily apparent reasons, uniform dissemination of professional knowledge was impossible, such a standard of care rule may well have been supported by valid and substantial reason. However, said the court, under present day conditions the reason for the rigid application of the rule as now advocated by defendant under the facts herein disclosed becomes a mere excuse. In fact, in a case similar to the present one our Supreme Court condemned a like contention, stating that to exclude expert testimony on such a ground "would be a misuse of the rules of evidence and an unjustifiable emphasis on empty technicalities." All of the medical witnesses testified as to the standard practices generally in fracture cases, although they disagreed on the application of the various methods to this particular injury. Furthermore, it was established by the defendant's *own witnesses* that the standard of care in Lodi was as good as elsewhere in the state and that the average physician in Lodi was as proficient as the average physician in neighboring towns. The court therefore held that the testimony of the plaintiff's expert was properly admitted.

The defendant next contended that one of the instructions given by the trial court was improper. A part of that instruction provided, "If he [defendant] undertakes such a service in a special branch of medical, surgical or other healing science, and if at that time and in the same locality there are members of his profession who specialize in, and limit their practice to, that particular branch of the healing profession, it is his duty to possess that degree of learning and skill ordinarily possessed by physicians and surgeons of good standing who engage in that special practice in the same locality." The defendant's attack on the instruction is directed primarily at the paragraph quoted, which he characterized as a "failure to differentiate between the recognized or unquestioned duty of a general practitioner to refer a case to a specialist when the ordinarily skilled practitioner would have done so and the duty imposed by the instruction, which requires every practitioner to be a specialist." He further argued that the record is barren of any evidence indicating that the ordinary physician in Lodi would not have treated the plaintiff but would have referred him to a specialist.

It appears from an examination of the attacked instruction, said the court, that it does not, as contended by defendant, impose on the general practitioner an affirmative duty of care equal to that of a specialist. The instruction merely states that if the general physician undertakes a specialized service and if in his locality there are those who specialize or whose practice is limited to that particular branch of the healing professions then it is his duty "to possess that degree of learning and skill ordinarily possessed by" those who specialize in such practice in that locality. The instruction does not attempt to cover all cases but limits the application thereof to those localities where there are specialists available in that particular branch of medicine. The record in this case, the court continued, conclusively shows that here a general practitioner confronted with a "very rare . . . situation," and in no emergency, undertook to treat a very "complicated," "difficult" and "unusual" compounded comminuted fracture. It is true that no orthopedic specialists were available in Lodi. But in Stockton, a distance of 12 to 14 miles, there were two available, one of whom testified for the defendant and who, the defendant said, had been called in by him for assistance in orthopedic cases on several occasions. This, said the court, is a day of specialists, a condition unquestionably brought about by the rapid and highly technical advancements in the entire field of medicine, advancements so complex and involved as to make it impossible for one to keep abreast of them all. Therefore, under conditions and circumstances such as are disclosed herein, it necessarily would seem to follow that the general rule must be that "as a part of the requirements which the law exacts of general practitioners of medicine and surgery, or other schools of healing, if, in the exercise of the care and skill demanded by those requirements, such a practitioner discovers, or should know or discover, that the patient's ailment is beyond his knowledge or technical skill, or ability or capacity to treat with a likelihood of reasonable success, he is under a duty to disclose the situation to his patient or advise him of the necessity of other or different treatment."

Finally, the defendant contended that he was materially prejudiced by the trial court in allowing the jury to examine the roentgenograms of the plaintiff's injuries, in that the effect of allowing such an examination without a qualifying instruction necessarily emphasized the angulation of the plaintiff's leg and caused the jury to pass over the real issue of the standard of care used by the defendant. Such a contention, said the court, is wholly without merit. The roentgenograms were identified, explained and interpreted at length by the defendant doctor and by the expert witnesses of both parties and therefore were properly admitted in evidence. Being properly admitted in evidence, the court concluded, we know of no rule in the circumstances whereby a jury may be prohibited from viewing such evidence.

The judgment in favor of the plaintiff was accordingly affirmed.—*Sinz v. Owens, 196 P. (2d) 52 (Calif., 1948).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I & II.* Various Centers, Feb., June and Sept. 1949. *Part II.* April, 1949. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2, Pa.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc.: *Written.* July 15. Various locations. Final date for filing application is April 15. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Avenue, New York 27.

American Board of Internal Medicine: *Oral.* San Francisco, Feb. 8-10, 1949. New York City, March 23-25. Final date for filing application is Jan. 2. Philadelphia, June 1-3. Final date for filing application is Jan. 2. *Written.* Oct. 17, 1949. Final date for filing application is May 1. Asst. Sec.-Treas., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 1949. Final date for filing application is Jan. 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn.

American Board of Ophthalmology: *Written.* Jan. 14. *Oral.* San Francisco, March 21-24; New York, June 11-15; St. Louis, Oct. 15-19; Boston, Dec. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Obstetrics and Gynecology, Inc.: *Oral. Chicago,* May 8-14. Final date for filing application is *April 1.* Sec., Dr. Paul Titus, 1015 Highland Building, Pittsurgh 6.

American Board of Orthopedic Surgery: *Part I.* Various Centers, April and May. Final date for filing application is Dec. 31. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Otolaryngology: New York, May 11-14; Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Boston, April. Final date for filing application is March 1. Sec., Dr. Robert A. Moore, 507 S. Euclid Ave., St. Louis 10, Mo.

American Board of Pediatrics: *Oral.* St. Louis, Feb. 18-20. Baltimore, May 7-9. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Rd., Rosemont, Pa.

American Board of Physical Medicine: Atlantic City, June 4-5. Final date for filing application is March 15. Sec., Dr. R. L. Bennett, 30 N. Michigan Blvd., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Psychiatry and Neurology: *Oral.* May. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March 1949. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 28-30, 1949. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

Alaska: * Juneau, March 1. Sec.-Treas., Dr. W. M. Whitehead, Box 140, Juneau.

Arkansas: * Little Rock, June 9-10. Sec., Dr. L. J. Kosminsky, Texarkana.

Colorado: * Denver, Jan. 4-7. Final date for filing application is Dec. 18. Sec.-Treas., Dr. W. W. King, 831 Republic Bldg., Denver 2.

Connecticut: * Hartford, March 8-9. Secretary to the Board, Dr. Creighton Barker, 258 Church Street, New Haven.

Delaware: *Examination.* Dover, Jan. 11-13. *Endorsement.* Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

Georgia: *Examination.* June, Atlanta and Augusta. *Reciprocity.* Atlanta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O. San Francisco, Calif.

Hawaii: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 10-12. Dir., Bureau of Occupational Licenses, Miss Estella S. Mulliner, State House, Boise.

Illinois: Chicago, Jan. 11-13. Superintendent of Registration, Mr. Fred W. Ruegg, State House, Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

Louisiana: *Examination.* New Orleans, Dec. Sec.-Treas., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12. *Homeopathic Examination.* Baton Rouge, subject to call. Sec., Dr. F. H. Hardenstein, 715 Pere Marquette Bldg., New Orleans.

Maine: *Portland, March 8-9. Sec., Dr. Adam P. Leighton, 192 State* Street, Portland.

Massachusetts: *Examination.* Boston, March 8-11. Sec., Dr. George L. Schadt, 413 E. State House, Boston.

Minnesota: * Minneapolis, Jan. 18-20. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Building, St. Paul.

Montana: Helena, April 4-6. Sec., Dr. O. G. Klein, First National Bank Building, Helena.

Nebraska: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Building, Lincoln 9.

Nevada: Carson City, May 2. Sec., Dr. G. H. Ross, 112 N. Curry Street, Carson City.

New Hampshire: Concord, March 10. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, June 21-24. Sec., Dr. E. H. Hallinger, 28 West State Street, Trenton 8.

New Mexico: Santa Fe, April 11-12. Sec., Dr. V. E. Berchtold, 141 Palace Ave., Santa Fe.

New York: *Examination.* Various Centers, Feb. 1-4. Sec., Dr. J. L. Lochner, Jr., 23 S. Pearl St., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 17. Sec., Dr. Ivan M. Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-7. Act. Sec., Dr. C. J. Glaspel, Grafton.

Oregon: * *Examination.* Jan. 5-7. Final date for filing application is Dec. 22, 1948. *Endorsement.* Jan. 21-22. Final date for filing application is Jan. 3. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, Jan., 1949. Act. Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Puerto Rico: *Examination.* Santurce, March 1. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

Rhode Island: * *Examination.* Providence, Jan. 6-7. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

South Dakota: * Pierre, Jan. 18-19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

Tennessee: * *Examination.* Memphis, Dec. 22-23. Sec., Dr. H. W. Qualls, 1635 Exchange Building, Memphis 3.

Texas: *Examination.* Austin, June 16-18. Sec., Dr. M. H. Crabb, 209 Medical Arts Bldg., Fort Worth 2.

Utah: *Examination.* Salt Lake City, July. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Vermont: *Examination.* Burlington, Feb. Sec., Dr. F. J. Lawliss, Richford.

Washington: * Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

West Virginia: Charleston, Jan. 3-5. Sec., Public Health Council, Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

Wisconsin: * Madison, Jan. 11-13, 1949. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls, Wis.

Wyoming: *Examination.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Feb. 21-26. Sec.-Treas., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Dec. 21. Sec., Mr. Francis A. Roy, University of Arizona, Tucson.

Connecticut: New Haven, Feb. 12. Exec. Asst., State Board of Healing Arts, Miss Mary G. Reynolds, 110 Whitney Ave., New Haven 10.

District of Columbia: *Examination.* Washington, April 18-19. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg., East, Washington.

Florida: *Examination.* Gainesville, June 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Iowa: *Examination.* Des Moines, Jan. 11. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor & Detroit, Jan. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Jan. 4-5, April, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

Oklahoma: Spring of 1949. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. Sec., Basic Science Examining Committee, Dr. C. D. Byrne, Univ. of Oregon, Eugene.

Rhode Island: *Examination.* Providence, Feb. 9. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

18:1-32 (July) 1948

Further Observations on Ectopic Pregnancy. F. E. Whitacre and T. Bryan.—p. 1.
Status of Venereal Serology in Alabama. H. P. Sawyer.—p. 5.
Correlation of Liver Function Studies. S. W. Windham, J. T. Ellis and S. G. Latiolais.—p. 7.
Management of Diabetes Mellitus, Hay Fever, Asthma and Related Diseases. D. E. Jackson.—p. 19.

18:33-60 (Aug.) 1948

Recent Advances in Cancer Research. S. P. Reimann.—p. 33.
Common Neurosurgical Problems in General Practice. W. G. Haynes. —p. 40.
Vaginal Hysterectomy. J. S. DuBois.—p. 45.

American Heart Journal, St. Louis

36:161-320 (Aug.) 1948

*Experience with "Anoxemia Test" in Patients with Angina Pectoris and in Those with Atypical Chest Pain. H. J. Stewart, E. L. Horger and C. W. Sorenson.—p. 161.
Electrical Effects of Injury at Various Myocardial Locations. H. K. Hellerstein and L. N. Katz.—p. 184.
*Circulatory Responses to Spinal and Caudal Anesthesia in Hypertension: Relation to Effect of Sympathectomy: I. Effect on Arterial Pressure. R. D. Taylor, R. Birchall, A. C. Corcoran and I. H. Page. —p. 221.
*Id.: II. Effect on Renal Function. A. C. Corcoran, R. D. Taylor and I. H. Page.—p. 226.
Experimental Studies on Auricular Flutter and Auricular Fibrillation. D. Scherf, F. J. Romano and R. Terranova.—p. 241.
*Cellophane Treatment of Syphilitic Aneurysms with Report of Results in Six Cases. J. K. Poppe.—p. 252.
Mechanism of Irregular Sinus Rhythm in Auriculoventricular Heart Block. I. R. Roth and B. Kisch.—p. 257.
Embolism at Bifurcation of Aorta: Review of Literature and Report of First Case Surviving After Gangrene. F. S. Morest and S. Rubin. —p. 277.
Electrocardiographic Changes in Typhoid Fever and Their Reversibility Following Niacin Treatment. M. Rachmilewitz and K. Braun.—p. 284.

Anoxemia Test in Angina Pectoris and Atypical Chest Pain.—Stewart and his associates used the anoxemia test as described by Levy and his associates. Their experience is based on one hundred and thirty-eight tests performed on 119 patients, who were differentiated into four groups. The first group of 26 patients had no evidence of heart disease and served as controls. Of the second group of 5 patients, 2 had dextrocardia, 2 had hypertension and 1 had active primary syphilis. Group three was composed of 40 patients classified as having typical angina. Group four was designated as "atypical pain" group. None of the 26 normal subjects showed electrocardiographic changes following the anoxemia test. The anoxemia test gave electrocardiographic evidence of coronary insufficiency in 45 per cent of the group with typical angina, compared with 13 per cent of the group with atypical pain. When the pain was included, the test gave evidence of coronary insufficiency in 73 per cent of the group with angina and in 40 per cent of the group with atypical pain. This suggests the possibility that pain of an origin other than coronary disease may be aggravated by anoxemia. If there are clinical signs of angina pectoris, these should be accepted even if the result of the anoxemia test is negative. Hypertension had no effect in statistically increasing the incidence of coronary insufficiency in the group with typical pain, but in the group with atypical pain the reverse was true. The anoxemia test, when electrocardiographically positive in result, can be used as a means of substantiating the diagnosis of coronary insufficiency. When patients experience pain during the test but do not have an electrocardiographically positive reaction, the following factors should be considered: the similarity of the pain to the spontaneous pain, its prompt occurrence within a short time after beginning of the test and the nature of the pain as determined by observation of the patient. A positive electrocardiographic test is more significant than a negative one, and more significant than the occurrence of pain. In certain instances when the anoxemia reaction is negative, the reaction to the exercise test may be positive, but great care must be used in subjecting patients to exercise to the point of inducing pain. There were no serious reactions from the judicious use of the anoxemia test. Contraindications to the test are congenital heart disease, rheumatic heart disease with valvular damage, pregnancy, myxedema, epilepsy, emphysema or other pulmonary disease, severe anemia and recent coronary occlusion.

Circulatory Responses to Spinal and Caudal Anesthesia.—Taylor and his co-workers examined the relationship between the effect on arterial pressure of high spinal or caudal anesthesia and the effect of subsequent sympathectomy by the procedure of Smithwick. Preoperative and postoperative studies were made in 43 patients. Spinal anesthesia was induced in 25 of these and caudal anesthesia in 18. The effects of caudal and spinal anesthesia on arterial pressure in hypertension appeared similar despite the fact that in the former voluntary muscles were not paralyzed. Decreases in pressure were observed during anesthesia in 40 of the 43 patients. Blood pressure was persistently decreased by lumbodorsal sympathectomy and ganglionectomy in 12 of these patients. The 3 patients whose arterial pressures were not decreased by anesthesia were similarly unaffected by operation. It is concluded that the blood pressure response to spinal and caudal anesthesia has no more than negative value in the selection of patients for sympathectomy. The discrepancy between the effects on arterial pressure of spinal or caudal anesthesia and sympathectomy may be due to the great difference in time during which the effects are observed or to a difference in the denervation which each of them causes.

Circulatory Responses to Anesthesia: Effect on Renal Function.—Investigations by Corcoran and his associates are concerned with (1) the nature of the renal functional changes induced by high spinal and caudal anesthesia in patients with essential hypertension, and (2) the possibility of predicting in advance the results of sympathetic ganglionectomy from an analysis of these changes. The spinal anesthesia group included 1 patient with minimal hypertension and 17 patients with essential hypertension. The 18 patients in the caudal anesthesia group include 1 with mild essential hypertension, but the average severity of the disease in this group was greater than in that studied under spinal anesthesia. Most of these patients underwent bilateral lumbodorsal sympathectomy and ganglionectomy. The effects of high spinal and caudal anesthesia were found to be similar. Anesthesia which reduces average arterial pressure in hypertensive patients by 20 mm. of mercury to levels ranging from 85 to 125 mm. of mercury usually causes renal vasodilation, resulting in increased renal blood flow and a slight decrease in glomerular filtration rate. The observations are inconsistent with the view that essential hypertension is a compensation for increased renal vascular resistance. Qualitatively, the renal vascular responses of normotensive and hypertensive patients to these procedures are identical. Quantitatively, they may differ slightly in that, in hypertension, a fraction of afferent arteriolar resistance is not removed by anesthesia. The renal vasodilator response to anesthesia in hypertension indicates that a large proportion of increased renal vascular resistance in this disease is dependent on nervous influences which are affected by anesthesia extending to about the fifth thoracic vertebra, or that denervation by anesthesia has sensitized vasodilator influences. The major hemodynamic change induced by spinal or caudal anesthesia is seen to be due to decreased peripheral resistance. Exceptionally, a few hypertensive patients show deficient or slowed renal vasodilator responses to spinal or caudal anesthesia. Two such patients failed to benefit from lumbodorsal sympathetic ganglionectomy. But operation was equally ineffective in patients whose responses were vasodilator. The renal vascular response to anesthesia is not a positive guide in the selection of patients, although the absence of vasodilation during anesthesia may contraindicate operation.

Cellophane Treatment of Syphilitic Aneurysms.—Poppe presents observations on 6 patients whose thoracic aortic aneurysms have been successfully treated by cellophane wrapping. It is important to select the proper type of cellophane to produce fibrosis, since certain varieties incite little or no foreign body reaction. Polythene cellophane produces a dense fibrous tissue reaction which can be applied to aortic aneurysms to curb their pulsations, expansion and tendency to rupture. In the 6 patients under consideration relief of chest pain has been noted without deleterious effects from the cellophane during periods ranging from a few months to two years. The most favorable results have been obtained in fusiform aneurysms of the descending thoracic aorta, where it is almost possible to encircle the dilatation completely without encountering other vital structures or major arterial branches. Contraindications to surgical treatment appear to consist of bronchial obstruction or erosion from pressure, severe heart disease with aortic insufficiency and decompensation, or erosion of the anterior chest wall. Arteriosclerotic aneurysms appear less suitable for surgical treatment than syphilitic aneurysms in view of the generalized distribution of the disease, advanced age of the patients and frequent location of the dilatation in the abdominal aorta with involvement of vital visceral branches.

American Journal of Clinical Pathology, Baltimore

18:593-670 (Aug.) 1948

*Serologic Findings in Patients with Primary Atypical Pneumonia. H. R. Morgan and M. Finland.—p. 593.
Isoimmunization to Rh Antigen E in Person with Genes CDe. W. G. Rice and Faith G. Watson.—p. 598.
*Malignant Melanoma of Skin: Clinical and Pathologic Analysis of 75 Cases. L. V. Ackerman.—p. 602.
Rapid Method for Preparation of Serologically Active Phospholipin and Purified Lecithin. T. V. Letonoff.—p. 625.
Parasitologic Studies of World War II Veterans, with Special Reference to Schistosomiasis Japonica. G. Pitner, W. L. McNamara and F. M. Gogolak.—p. 632.
Proteus OX 19 Agglutination in Pregnancy. A. C. Barnes.—p. 635.

Atypical Pneumonia.—Morgan and Finland examined the serums of 89 patients admitted to the medical wards of the Boston City Hospital whose clinical course, physical examination and roentgenologic findings were characteristic of primary atypical pneumonia. In 74 patients cold hemagglutinins developed, and in 35 of 44 patients tested Streptococcus MG agglutinins were demonstrated. In 4 patients antibodies for a virus of the psittacosis group developed, indicating an infection with one of these agents. No instance of Q fever was observed in the 25 patients whose serums were tested for antibodies against this agent. In 5 additional patients who had atypical pneumonia associated with erythema multiforme exudativum, cold hemagglutinins were present, and 2 of these patients showed a rise in titer in complement fixation tests for psittacosis. A history of exposure to sick pigeons was a significant observation with respect to the development of psittacosis antibodies.

Malignant Melanoma of Skin.—Ackerman reports 75 patients, 44 men and 31 women between the ages of 19 and 90 years, with malignant melanoma of the skin. In 26 patients the lesions occurred on the lower extremities and in 24 in the region of the head and neck. Forty-six patients had a preexisting mole which preceded the occurrence of tumor most frequently in the lower extremities. In 15 of the 46 patients the mole had been present since birth. Malignant melanoma was easily diagnosed when the tumor was deeply pigmented and showed ulceration and bleeding. When the diagnosis was doubtful incisional biopsies were made, a thin wedge of tissue which included both normal and abnormal skin being removed. It never resulted in dissemination of the disease. The greatest difficulty in microscopic diagnosis is presented by the uncommon nonpigmented or scantily pigmented melanocarcinoma; here the dopa (dioxyphenylalanine) test may be diagnostically helpful. The age of the patient has bearing on the prognosis. If a malignant melanoma appears in a child in the prepubertal age group and is removed, the prognosis is excellent, even if the pathologic diagnosis is unequivocal. If melanuria due to malignant melanoma is present, the case is invariably advanced and the prognosis is hopeless. Thirteen of the author's patients had melanuria consistently present, and all are dead. In spite of the ominous character of the tumor, 8 of 21 patients (38 per cent) treated by radical excision and radical dissection survived five years. Three of the 8 had metastases to the regional lymph nodes at the time of operation. If 22 other cases of hopelessly far advanced disease which appeared during the same period are included, the percentage of survival for five years is 19 per cent. The treatment of this tumor is radical surgical excision followed by radical dissection of regional lymph node areas when predictable. All forms of compromise therapy including irradiation are contraindicated.

American Journal of Medical Sciences, Philadelphia

215:599-726 (June) 1948

Amino-Aciduria in Hepato-Lenticular Degeneration (Wilson's Disease). L. Uzman and D. Denny-Brown.—p. 599.
*Dicumarol Therapy in Acute Coronary Occlusion with Myocardial Infarction. M. McCall.—p. 612.
Further Studies on Anticoagulants. C. Reich and W. Eisenmenger.—p. 617.
Has Methionine a Protein Sparing Effect in Acute Infectious Hepatitis? H. Popper, D. D. Kozoll, F. Steigmann and W. T. Mok.—p. 624.
Significance of Abnormal Forms of Ballistocardiogram: Study of 234 Cases with 40 Necropsies. I. Starr and R. L. Mayock.—p. 631.
Comparative Evaluation of Tetraethylammonium Chloride and Sodium Amytal in Patients with Hypertensive Cardiovascular Disease. I. G. Tamagna and C. A. Poindexter.—p. 651.
*"Capillary Fragility" in Hypertension: Effect of Antiscorbutic Therapy on Results of Tests for "Capillary Fragility." L. A. Soloff and C. T. Bello.—p. 655.
Relationship of Retinal Hemorrhages in Hypertensive Patients to Cerebral Hemorrhage: Comparison of Retinal Picture in Hypertensive Individuals Who Died of Heart Failure with Those Who Suffered a Cerebral Hemorrhage. L. Soloff and C. T. Bello.—p. 660.
Bronchopulmonary Hypogenesis: Clinical and Roentgenologic Features in Adult, with Long Follow-Up Observations. L. Schneider.—p. 665.
Effect of Exercise on Electrocardiogram (Master Two-Step Test) in Diagnosis of Coronary Insufficiency. D. Unterman and A. C. DeGraff.—p. 671.
Treatment of Anuria by Intestinal Perfusion. H. H. Marquis and F. P. Schnell.—p. 686.
Normal Red Cell in Infancy and Childhood; Some Recent Advances. B. Dickstein and I. J. Wolman.—p. 694.
"Rooming-In." H. Fields and E. K. Rose.—p. 710.

"Dicumarol" Therapy in Coronary Occlusion.—McCall reports observations on 71 patients with myocardial infarction following acute coronary occlusion. The diagnosis was substantiated by history, clinical signs and symptoms, laboratory data and the development of electrocardiographic patterns of acute anterior, posterior or lateral wall infarction, and/or a combination of these. Three who died within forty-eight hours of admission are omitted from the statistical data. Anticoagulant therapy consisted solely of "dicumarol." In addition, all patients received papaverine hydrochloride during the entire period of hospitalization. Oxygen was administered by catheter and morphine intravenously or subcutaneously routinely during the first three days and as necessary thereafter. Sodium restriction and leg exercises completed the regimen. Prothrombin times were determined daily. Although certain features were undesirable, it seems that this pharmacologic approach was sound. The appearance of hemorrhagic complications, especially hematuria, was unpleasant; but serious harm due to the drug did not occur. This sole hazard was controlled by menadione sodium bisulfite. The most useful purpose served by "dicumarol" therapy is prevention of thrombus formation in pelvic and leg vessels, as well as in the septal and mural areas. Because of the low incidence of thromboembolic phenomena a less stormy convalescent period was insured, justifying the continued use of this form of therapy.

"Capillary Fragility" in Hypertension.—Soloff and Bello say that since the hemorrhagic complications of hypertension are well known to physicians and unfortunately are both known and feared by patients with hypertension, a method of study which is capable of predicting such a development is worthy of becoming a routine procedure in the study of hypertensive patients. It has been suggested by Griffith and Lindauer that there is a close association between capillary hemorrhages and cerebral apoplexy. In view of contradictory results obtained by other investigators, the authors considered it necessary to reevaluate Göthlin's procedure as a test for capillary fragility in hypertension, but only after subclinical scurvy had been excluded. It was also thought desirable to compare the Göthlin reaction with the Rumpel-Leede reaction. They determined the capillary fragility by means of the Göthlin and the Rumpel-Leede tests in 50 patients with hypertension, who had been previously saturated with vitamin C. Only 2 patients had a positive reaction to the Göthlin test and 33 had a positive reaction to the Rumpel-Leede test. When the Göthlin test was performed on hypertensive patients previously placed on an adequate vitamin C intake, the authors were unable to verify the results obtained by Griffith and Lindauer. Rutin did not reverse to normal the Göthlin reaction of 2 patients who had been previously saturated with vitamin C. Rutin did not reverse to normal the reaction to the Rumpel-Leede test. There does not appear to be any correlation between retinal hemorrhages and a positive Rumpel-Leede reaction.

American Journal of Medicine, New York

5:165-320 (Aug.) 1948

*Pulmonary Paragonimiasis. A. J. B. Tillman and H. S. Phillips. —p. 167.

Studies on Patients with Cirrhosis of Liver: Plasma and Liver Lipid Distribution and Its Relation to Pathology of Liver. G. H. Stueck Jr., S. H. Rubin, D. H. Clarke and others.—p. 188.

Renal Tubular Excretory Capacity for Penicillin in Health and in Subacute Bacterial Endocarditis. S. Bryner, W. H. Clark, Elizabeth Randall and L. A. Rantz.—p. 202.

Pulmonary Atelectasis in Stuporous States: Study of Its Incidence and Mechanism in Sodium Amytal Narcosis. R. L. Swank and M. I. Smedal.—p. 210.

*Prognosis in Gastric Cancer: Study of Five-Year Survivors. S. N. Maimon, W. L. Palmer and J. B. Kirsner.—p. 230.

Benign Pelvic Tumors with Ascites and Hydrothorax: Meig's Syndrome. W. E. Wooldridge and P. O. Hagemann.—p. 237.

*Metabolic and Inflammatory Histiocytosis: with Case Reports of Gaucher's Disease, Letterer-Siwe's Disease and Eosinophilic Granuloma. B. Straus.—p. 245.

Cor Pulmonale: Observations on Forty-two Autopsied Patients. S. D. Spatt and D. M. Grayzel.—p. 252.

Urinary Calculi. J. K. Lattimer.—p. 256.

Problems in Evaluation of Protein Therapy. F. Homburger.—p. 264.

Pulmonary Paragonimiasis.—Tillman and Phillips report 12 Philippine Islands guerillas hospitalized because of tuberculosis and suspected paragonimiasis or oriental lung fluke disease. Coexistent tuberculosis and paragonimiasis were established in 4 of the 12 cases reported. In all but 1 instance a definite history of ingestion of fresh water shell fish was obtained. The onset of symptoms of paragonimiasis varied from one week to thirty-four months prior to observation, so that both early and late cases were seen. In spite of the history of prolonged cough and hemoptysis, the majority of the patients did not appear to be sick. Rales were present in 11 of the patients. These varied from fine to coarse in character and were heard in varying portions of the lungs. The laboratory diagnosis of this disease depends on the recognition of ova in the sputum, feces and pleural fluid. Transiently positive serologic reactions were noted in 4 patients both by the Kahn test and the Wassermann test. Seven patients showed an increase in serum globulin. Roentgenologic examination revealed massive and large areas of density in the lungs of one group, and diffuse changes with small, soft and generally multiple lesions in another group. Antimony potassium tartrate was tolerated poorly by 4 patients and did not appear effective in its brief trial. Emetine hydrochloride resulted in prompt and considerable subjective relief. Its repeated use was followed by the disappearance of ova in the sputum and pleural fluid in one instance. There was only a slight effect on the pulmonary parenchymal change within two months following its administration. The presence of tuberculosis is undeniable in the few cases in which tubercle bacilli were observed, but whether this disease was responsible solely for the roentgen appearance may be questioned. It is more likely that the association of tuberculosis and paragonimiasis contributed to the roentgenologic picture, but the subjective relief and decrease of pulmonary symptoms following emetine suggest that the part of the fluke was more important than that of the tubercle bacilli in causing the roentgen changes. Paragonimiasis may simulate tuberculosis closely, so that the former should be considered in the differential diagnosis of hemoptysis in personnel who have been in endemic regions.

Gastric Cancer.—Maimon and his co-workers report 377 patients, between the ages of 21 and over 70 years, with cancer of the stomach who were admitted to the Clinics of the University of Chicago and were operated on. One hundred and fifteen (30.8 per cent) survived resection; twenty-eight (7.4 per cent) survived five years or longer. In addition to these 28 survivors, 2 who lived four years and nine months have been incorporated in the authors' study, making a total of 30. Fifteen of the survivors (50 per cent) had had symptoms of over one year's duration as compared with 31 per cent of the initial group. The symptoms were essentially identical in type. Palpable tumor masses were present in 40 per cent of the original group as compared with 26.6 per cent of the survivor group. Nine of the survivors had type I (Borrmann) carcinoma, 17 had type II and 4 had type III; there were no five year survivors in the Borrmann type IV group. Metastases were present in 7 (23 per cent) of the five year survivors, 5 with involvement of lymph nodes, 1 with mesenteric involvement and 1 with spread to the transverse colon. Twenty-four (80 per cent) of the five year survivors were restored to useful life. Contrary to what might be expected in cancer of the stomach, patients with symptoms of long duration tend to show a higher percentage of five year survival than do those with symptoms of short duration. Presence of a palpable tumor mass is not a contraindication to operation or resection. The type of carcinoma is of the greatest prognostic significance, the long survivors consisting chiefly of those with type I and type II tumors.

Histiocytosis.—Straus reports 1 case of Gaucher's disease in a man aged 34. The patient illustrated well the clinical features of lipid histiocytosis by presenting pigmentation of the skin, a greatly enlarged spleen, leukopenia and a hemorrhagic tendency. The lower halves of both femurs showed widening of the shaft, thickening of the cortex and the characteristic Erlenmeyer flask appearance. Familial incidence of the disease was revealed by the patient's statement that his nephew had the same disease. This primary lipid metabolic disorder is to be clearly differentiated from eosinophilic granuloma of bone and its congeners, Hand-Schüller-Christian's disease and Letterer-Siwe's disease. They represent merging clinical variations of an essentially similar pathologic process, best described collectively by the term inflammatory histiocytosis. One case, predominantly of the Letterer-Siwe type, is reported in a man aged 21 with a bony defect involving the inner and outer table of the left parietal bone and with mottled infiltration and honeycombing of the lungs. Two additional cases, 1 of solitary eosinophilic granuloma of bone in the left temporoparietal region in a veteran aged 26, and 1 of multiple eosinophilic granuloma of bone and also pulmonary infiltration in a man aged 22, are presented. These syndromes or entities are believed to be due to some obscure infectious process which causes a secondary disorder of the lipid metabolism. Knowledge of these conditions will obviate confusion with malignant tumors involving bone and other granulomas such as tuberculosis and syphilis.

American Journal of Psychiatry, New York

104:*593-672* (April) *1948*

Ceiling Effect of Glutamic Acid on Intelligence in Children and in Adolescents. F. T. Zimmerman, Bessie B. Burgemeister and T. J. Putnam.—p. 593.

Clinical and Electroencephalographic Observations Concerning Effect of Tridione in Epileptic Patients. E. Davidoff.—p. 600.

*Use of Ergotamine Compounds in Treatment of Acute Simple Anxiety States. D. M. Kelly.—p. 608.

Preliminary Report of Experience in Group Psychotherapy of Schizophrenics. J. Abrahams.—p. 613.

Group Psychotherapy in Veterans Administration Hospitals. N. S. Kline and A. Dreyfus.—p. 618.

Group Psychotherapy with Patients' Relatives. W. D. Ross.—p. 623.

Art in Psychotherapy. I. Bieber and J. K. Herkimer.—p. 627.

Bibliotherapy as Adjuvant in Psychotherapy. L. A. Gottschalk.—p. 632.

Patient-Physician Relationship in Psychotherapy. J. V. Coleman.—p. 638.

Technics of Initial Interview and Methods of Teaching Them. Florence Powdermaker.—p. 642.

Exploratory Study of Usefulness of a Battery of Psychologic Tests with Nursery School Children. Sarah Schafer and Mary Leitch.—p. 647.

Concept of Psychogenesis. J. R. Reid.—p. 643.

Ergotamine Compounds in Anxiety States.—Kelly reports observations on 59 patients with anxiety states who were treated with ergotamine tartrate, 37 treated with ergonovine maleate and 36 treated with placebos (calcium lactate). Dosage consisted of 2 mg. per dose, so that each patient received a total of 12 mg. in twenty-four hours. This dosage was continued for seven days. In addition to the ergot alkaloids or placebo, each patient was offered a high caloric diet, group psychotherapy, group physical therapy, medical and diagnostic procedures as indicated, and at night was given up to 1½ grains (0.1 Gm.) of sodium pentobarbital as a sedative if needed. It was found that patients receiving ergotamine tartrate or ergonovine maleate in massive doses do better than those who received placebos of milk sugar. Actually they do best from a subjective point of view, but tremors, sweating and irritability are also relieved. There was improvement in more cases with the alkaloids than with the lactose medication but the number of cases in which improvement occurred is not sufficiently high to merit the use of the drug except in specifically selected cases. The ergot alkaloids do act to combat the automatic stimulation resulting from acute anxiety. In selected cases these drugs may prove extremely useful.

American Journal of Public Health, New York

38:1061-1120 (Aug.) 1948. Partial Index

Relation of Economic Status to Tuberculosis Mortality by Age and Sex. M. Terris.—p. 1061.
Rheumatic Heart Disease and Crowding: Survey of Rural and Urban Connecticut School Children. R. W. Quinn.—p. 1071.
*Factors of Sewage Pollution of Oyster Beds in Galveston Bay. R. I. Wise, J. B. Winston and G. Culli Jr.—p. 1109.
Modified Self-Selection Method of Feeding Preschool Children in Home. Margaret F. Gultelius.—p. 1118.
Nutrition Appraisals in Mexico. R. K. Anderson, J. Calvo, W. D. Robinson and others.—p. 1126.
Development of Voluntary Agency for Venereal Disease Control. H. H. Cowper.—p. 1136.
Study of Vision Testing Procedures. T. E. Shaffer.—p. 1141.

Sewage Pollution of Oyster Beds.—Wise and his associates state that in February 1944 an outbreak of food poisoning occurred in Galveston as the apparent result of eating raw oysters. An investigation was started to learn some of the important facts concerning sewage pollution of oyster beds and the water over the beds, to follow the changes in pollution by frequent sampling over a period of time, to study the effect of external factors on sanitary conditions and to determine whether conclusions based on similar studies made along the North Atlantic Coast of the United States are applicable for conditions in the Gulf Coast area. The coliform content of oysters and water above the oyster reefs in Galveston Bay, Texas, was found to decrease in the spring, remain at low level from July to December and increase to high values during January. This is in contrast to reports made by investigators who have made similar studies along the North Atlantic Coast and report a decrease in coliform organisms as the temperature of the water falls. On the Gulf Coast the temperature of the water rarely decreases to a point necessary to cause hibernation of the oyster and cessation of water flow; thus the oysters do not show a decrease in coliform content when harvested from polluted waters during the usual winter temperatures, as has been reported for oysters of the North Atlantic Coast. The total volume of water entering the bay each month correlated with the degree of pollution. The percentage of Escherichia coli to total coliform flora in the water over the oyster beds increased from July to November as stream flow was minimal. The percentage decreased markedly in December and January as stream flow into Galveston Bay increased.

American Practitioner, Philadelphia

2:771-838 (Aug.) 1948

Physiologic Treatment of Pulmonary Emphysema. A. L. Barach.—p. 771.
Modern Treatment of Peptic Ulcer with Intragastric Drip Therapy. A. Winkelstein and A. Cornell.—p. 779.
Purpura. R. D. Epstein.—p. 782.
Diaphragmatic Hernia Associated with other Gastro-Intestinal and Gall Bladder Disease. R. K. Caldwell.—p. 788.
Diagnostic Aids in Periarteritis Nodosa. F. W. Madison.—p. 791.
Polyarteritis (Periarteritis) Nodosa: Review of Clinical and Anatomic Characteristics and Theories of Etiology. T. C. Laipply.—p. 795.
Lipotropic Agents in Hepatic Disease. B. V. White.—p. 799.
Pediatric Intravenous Technic. P. R. Lurie—p. 805.
Hemophilia: The Role of Plasma Proteins in Pathologic Physiology of Disease and Its Treatment. F. H. L. Taylor.—p. 811.
Reflex Sympathetic Dystrophy. P. S. Caplan and H. M. Margolis.—p. 814.

American Review of Tuberculosis, New York

57:547-668 (June) 1948

*Delayed Chemical Pneumonitis in Workers Exposed to Beryllium Compounds. H. L. Hardy.—p. 547.
*Aluminum Therapy in Advanced Silicosis. J. W. Berry.—p. 557.
Control of Tuberculosis in Mass Production Industry. F. B. Wishard.—p. 574.
Postthoracoplasty Pulmonary Hernia: Report of 4 Cases. I. Pine and P. Morgenstern.—p. 580.
Partial Scapulectomy: Anterior Approach. W. Weisel and M. A. Cassel.—p. 587.
Streptomycin and Thoracoplasty: 2 Cases Treated with Streptomycin for Contralateral Disease. M. M. Steinbach, G. C. Leiner, A. A. Polachek and P. Heller.—p. 593.
Pleurisy with Effusion During Pneumothorax Therapy: Etiology, Bacteriology, Complications and End Results. J. B. Morrison.—p. 598.
Air Embolus in Pneumoperitoneum: Report of Fatal Case. W. H. Bailey.—p. 621.
Functional Pulmonary Changes Following Bronchography. W. A. Zavod.—p. 626.
Infection of Chick and Duck Embryos with Tubercle Bacilli. A. H. Eggerth, E. Dresher and V.. C. McOsker.—p. 632.
Sputum Examination: Comparative Study of Clorox and Tergitol-Javelle Water Concentration Methods. P. Schain, C. Magdalin and A. Russo.—p. 640.
"Speed of Reaction" Hypothesis: III. Current Epidemiologic Questions in re Tubercle. H. W. Hill.—p. 644.

Delayed Pneumonitis Caused by Beryllium.—The 36 cases reviewed by Hardy included 12 men and 24 women engaged in the manufacture of fluorescent lamps. The material used to coat these tubes is a mixture of zinc, manganese and beryllium silicate. Interest became fixed on the beryllium component, because the illness did not correspond with the disorders associated with zinc, manganese or silica exposure. The disease was designated as a delayed chemical pneumonitis. It was necessary to exclude pulmonary tuberculosis, silicosis or sarcoidosis as a cause of the illness. The development was gradual in all cases. The patients sought medical advice because of weight loss and fatigue, followed by gradually increasing exertional dyspnea. Anorexia and nervousness were prominent at onset, especially among the women workers. It has been a problem to keep up the morale of these patients, in part because of the ceaseless dyspnea and in part because they knew of the death of their fellow workers and felt the air of mystery which surrounds this disease. Twenty-three of the 36 patients are still functionally disabled, 12 completely and 11 partially so after an average illness of two years. The 3 patients still convalescent but well enough to work had an average illness of eighteen months. Four patients, although free from symptoms, present roentgenologic changes. Three cases of delayed chemical pneumonitis in persons who were not workers deserve mention. In 2, the diagnosis was confirmed by necropsy. These so-called "neighbor cases" were discovered in 2 patients who lived close to the building where the fluorescent powders were being handled. The third case is that of the mother of one of the workers who died after nearly two years of a severe course of delayed chemical pneumonitis. The author stresses that, in view of the lack of a satisfactory quantitative test for beryllium in the air, the etiologic relationship between exposure to a beryllium compound and the pneumonitis is not definitely established. At present the incrimination of beryllium rests solely on its presence as the common denominator in the working environment of these patients who present various clinical types of pulmonary disability.

Aluminum Therapy in Silicosis.—Berry says that a review of the studies on the status of aluminum therapy suggests that most of the reported improvement has been subjective, although a fair number of patients have shown improvement in pulmonary function by objective measurement; there have been no satisfactorily controlled experiments, and the optimum dose of aluminum has not been determined. A study was made of the course of the symptoms of 26 silicotic patients who were treated with inhalations of aluminum dust and of 9 patients with comparable degrees of silicosis who received no aluminum. The members of the latter group were treated with inhalations of room air, but otherwise the management of the two groups was identical. All 35 patients were under the impression that they were receiving the same therapy. An impressive degree of subjective improvement was reported by the majority of the persons in both groups. No objective changes were observed in the aluminum-treated group which could be convincingly attributed to the metallic therapy.

Annals of Surgery, Philadelphia

127:1105-1270 (June) 1948

Definition of Inoperability of Cancer. G. T. Pack.—p. 1105.
*Surgical Treatment of Infantile Type of Coarctation of Aorta. J. Johnson and C. K. Kirby.—p. 1119.
Battle Wounds and Injuries of Heart and Pericardium: Experiences in Forward Hospitals. P. C. Samson.—p. 1127.
Fractures of Acetabulum: Nature of Traumatic Lesions, Treatment, and Two-Year End-Results. M. R. Urist.—p. 1150.
Experimental Studies of Alginates as Hemostatics. V. K. Frantz. —p. 1165.
Toxicity of Sodium Alginate in Cats. M. B. Chenoweth.—p. 1173.
Significant Anatomic Relations in Syndrome of Scalene Muscles. H. D. Kirgis and A. F. Reed.—p. 1182.
*Local Injection of Penicillin in Acute Circumscribed Infections. I. W. Kaplan and H. Rabin.—p. 1202.
Temporary Failure of Gallbladder Visualization by Cholecystography in Acute Pancreatitis. H. L. Silvani and H. J. McCorkle.—p. 1207.
Dependable Method for Constant Intravenous Therapy in Infants Using Polyethylene Tubing. E. Alexander Jr., W. Small and J. B. Campbell. —p. 1212.
Phlebography in Localization of Incompetent Communicating Veins in Patients with Varicose Veins. T. B. Massel and J. Ettinger.—p. 1217.
Perforation of Ileum by Ingested Chicken Bone Complicating Ventral Hernia. B. C. Kilbourne.—p. 1226.
Accidental Operative Transplantation of Benign Giant Cell Tumor. G. H. C. Joynt and W. E. Ortved.—p. 1232.
Primary Carcinoma of Liver: Report of Case Treated by Lobectomy. B. S. Freeman and R. B. Moreland.—p. 1240.
Pseudoembolic Phlebitis with Ligation of Inferior Vena Cava: Case Report. W. W. Oaks and H. R. Hawthorne.—p. 1247.
Choledocho-Duodeno-Jejunal Intubation for Feeding Following Choledochostomy. H. B. Holsinger.—p. 1252.
Carcinoma of Premenopausal Breast: Endocrine Influence Suggested Clinically in 31 Cases. C. M. Waggoner.—p. 1256.

Surgical Treatment of Infantile Coarctation of Aorta.—Johnson and Kirby point out that coarctation of the aorta may be divided into an infantile type in which there is an elongated narrowing of the aorta at the isthmus and an adult type in which there is an abrupt constriction at or near the ductus arteriosus. They have recently operated on 3 patients with coarctation of the aorta of the infantile type. The ages of these patients were 13, 17 and 20. In all instances the constricted area extended over a distance of several centimeters. It was impossible to perform the type of operation used by Crafoord or Gross in the adult type of coarctation. In 2 patients the end of the subclavian artery was anastomosed to the upper end of the descending aorta after the area of the defect had been excised. In the third patient the operation had to be abandoned because of the friability of the vessels due to atheromatous changes. This patient died from hemorrhage in the immediate postoperative period. The first patient obtained a good result, with the blood pressure in the upper extremities returning to normal. The second patient's systolic blood pressure did not fall, although the diastolic pressure returned to normal. The authors believe that the use of the subclavian artery to bridge the gap in the infantile type of coarctation of the aorta is worthy of further trial in selected cases.

Local Injection of Penicillin in Circumscribed Infections.—According to Kaplan and Rabin acute infections may be divided into two clinical types: (1) acute infections which do not cause death of tissue, such as septicemia and cellulitis, and (2) acute infections causing suppuration and death of tissue, as seen in boils and carbuncles. The results of treatment with penicillin in acute infections in which there is no death of tissue are dramatic, while in acute localized infections they are at times discouraging. It seemed to the authors that the most suitable method of administration of penicillin in acute localized infections should be direct injection into the infected area. By this means a high concentration of the drug at the point where it was needed could be assured. The authors inject 3 cc. of distilled water into a bottle containing 100,000 units of penicillin, making a dilution of approximately 33,000 units to the cubic centimeter. Small lesions require 0.5 to 1 cc. at each injection, while larger ones, such as a carbuncle, may require 4 cc. or even more. The authors used the local injection of penicillin in over 300 cases of acute circumscribed infections. Their experience has demonstrated that it is safe, effective and economical. There is almost immediate improvement following injection, and recovery is established in a few days. However, this therapy should be reserved for the more serious lesions and for lesions so located that surgical procedures may produce a bad cosmetic result. It is not recommended for the treatment of the cellulitides, for infections in the dangerous areas of face or for bone felons.

Archives of Dermatology and Syphilology, Chicago

57:605-784 (April) 1948

*Noduloulcerative Granuloma of Legs: Treatment with Tocopherols. J. F. Burgess and J. E. Pritchard.—p. 605.
Congenital Ichthyosiform Erythroderma. C. W. Laymon and R. Murphy. —p. 615.
Mycosis Fungoides. L. Wertheim and G. S. Smith.—p. 625.
Hereditary Predisposition in Vascular Disturbances of Leg. Alice Carleton.—p. 636.
Sarcoidosis: Report of Atypical Case with Erythrodermic Lesions, Subcutaneous Nodes and Asteroid Inclusion Bodies in Giant Cells. W. F. Lever and D. G. Freiman.—p. 639.
Treatment of Dermatologic Lesions by Paravertebral Sympathetic Ganglion Block. M. Naide.—p. 655.
Patch Tests Versus Usage Tests, with Special Reference to Volatile Ingredients J. M. Siegel and L. Meltzer.—p. 660.
Para-Anthrax: Infection with Organisms Resembling Bacillus Anthracis. E. Epstein.—p. 664.
Paget's Disease of Vulva. W. A. Casper.—p. 668.
Pathogenesis of Benign Tumors of Cutaneous Appendages and of Basal Cell Epithelioma: I. Benign Tumors of Cutaneous Appendages. W. F. Lever.—p. 679.
Id.: II. *Basal Cell Epithelioma.* W. F. Lever.—p. 709.

Tocopherols in Noduloulcerative Granuloma of Legs.—Burgess and Pritchard report the case of a woman aged 52, in whom diabetes was first discovered in 1941. She appeared in the clinic in 1942, with nodular lesions in both legs. Diagnosis of erythema induratum was made, and rest and supportive treatment resulted in partial cure. In 1943 ulceration occurred on the anterior aspect of the left shin. Exacerbations occurred from this time on. In September 1946 there were multiple ulcerative lesions on the lower third of both shins. In October she was admitted to the hospital for further studies. Following two biopsies a diagnosis of necrobiosis lipoidica diabeticorum was made. Since previous treatment had been of little value, she was given daily intramuscular injections of a preparation of vitamin E ("natopherol in oil"), 250 mg., from December 2 to December 11. In all, 2,500 mg. of tocopherols was given. Improvement was noted after one week. Since daily injections in the hips became too painful, they were discontinued and a vitamin E preparation ("natopherol"), 100 mg. daily, was given by mouth. One month later, healing had occurred. Treatment with tocopherols, 100 mg. daily by mouth, was continued, and on April 15 the area was represented by a residual atrophic scar, at which time a fourth, and final, biopsy was made. Histologic studies revealed that there was rehabilitation of the collagen fibers, which was coincident with the disappearance of the granulomatous reaction and the lipoidal depositions. The changes were apparently brought about by treatment with vitamin E preparations.

Connecticut State Medical Journal, Hartford

12:703-818 (Aug.) 1948.

Seasonal Hay Fever. S. W. Jennes.—p. 705.
*Concealed Sources of Lead Productive of Chronic Lead Absorption and Intoxication. C. Y. Yeager.—p. 710.
Diabetes and Hyperthyroidism: Effect of Propyl-Thiouracil on Diabetes Mellitus Complicated by Hyperthyroidism. B. Greenhouse.—p. 713.
Periosteal Osteogenic Sarcoma of Right Femur Following Trauma—Case Report. M. R. Moore.—p. 715.
Ruptured Appendix in Pregnancy—Case Reports. S. Vernon.—p. 717.
Unusual Case of Post-Partum Anuria. T. S. Evans, A. P. Cipriano and H. Levine.—p. 718.
What is Mental Disease? C. C. Burlingame.—p. 721.
Report of AMA Committee to Study Nursing Problem. T. P. Murdock. —p. 726.

Chronic Lead Absorption and Intoxication.—According to Yeager an atmosphere containing less than 1.5 mg. of lead per 10 cubic meters of air is considered safe for workers in lead for the average work day. Discovery of lead fume exposures in Connecticut industry has led to a carefully coordinated control program by the Bureau of Industrial Hygiene. Excessive atmospheric concentrations have been found in lead and alloy casting, in soldering and subsequent grinding operations in bullet and storage battery manufacture, in several operations in the manufacture of silverware and in production using ceramics containing lead borosilicate frits. Stippling as a sign of lead poisoning may be misleading. This phenomenon occurs, although less consistently than in lead poisoning, in a variety of conditions, including pneumonia, anemia, leukemia, advanced cancer and following the administration of certain poisons, such as mercury, arsenic, aniline, nitrobenzene and carbon disulfide. McCord and Holden state that in the absence of other pathologic changes the finding in lead-exposed workers of, or in excess of, 1.5 per cent of basophilic stippling suggests the probability of lead absorption. Findings in excess of 2 per cent or 3 per cent are to be associated with an increased imminence of clinical lead poisoning. Other signs of lead poisoning include anemia (reduced erythrocyte and hemoglobin values), increase in the lead content of blood, urine and feces and the lead line of the gums.

Delaware State Medical Journal, Wilmington

20:131-154 (July) 1948

Anemias: Résumé. H. W. Howard.—p. 131.
Patent Ductus Arteriosus: Report of Case with Surgical Care. J. F. Flanders and J. R. Durham.—p. 136.
Clotting Mechanism: Its Clinical Application. H. E. Marx, R. M. Weaver, A. Morris and J. Flanders.—p. 139.

20:155-184 (Aug.) 1948

Governor Bacon Health Center. M. A. Tarumianz.—p. 155.
Psycho-Physical Unity. F. M. Harrison.—p. 156.
Cross Section and Long Section in Psychosis: Some Specific Implications of Each. E. J. Koch.—p. 159.
Problem of Psychiatric Etiology. G. J. Gordon.—p. 163.
Psychosomatic Dilemma. F. A. Freyhan.—p. 165.
Case of Involutional Psychosis, Paranoid Type. R. F. Reed.—p. 168.

Diseases of Chest, Chicago

14:475-632 (July-Aug.) 1948

*Role of Trauma in Initial Pneumothorax. I. G. Tchertkoff, I. J. Selikoff and E. H. Robitzek.—p. 475.
*Indications for Pulmonary Resection for Tuberculosis Both by Lobectomy and Pneumonectomy. L. A. Brewer III, F. S. Dolley and W. M. G. Jones.—p. 491.
Benign Pulmonary Histoplasmosis: Case Report with Brief Review of Literature. H. E. Johnson and R. Batson.—p. 517.
Pitfalls in Dealing with Cancer Statistics, Especially as Related to Cancer of Lung. Madge Thurlow Macklin.—p. 525.
Respiratory Volume Changes in Pulmonary Blood Vessels in Relation to Artificial Relaxation Therapy. C. C. Macklin.—p. 534.
Silicosis as Viewed by Internist. W. B. Yegge.—p. 550.
Primary Atypical Pneumonia: Roentgenographic Course, Complications, Recovery Rate and End Results. A. C. Wyman.—p. 568.
Functional Examination of Each Lung Before and After Paralysis of Phrenic Nerve. R. F. Vaccarezza, A. Soubrie and J. C. Rey.—p. 580.
Photofluorographic Survey of 33,971 Apparently Healthy Persons in Greece. B. Papanicolaou.—p. 585.

Trauma in Initial Pneumothorax.—According to Tchertkoff and his co-workers every initial pneumothorax is of necessity first a traumatic pneumothorax. The needle inserted into the potential pleural space punctures the visceral pleura and air escapes into the pleural space from the lung. This is true irrespective of the type or character of the needle used. Initial manometer readings are those of this traumatically produced pneumothorax; it is into this space that air may be added from the pneumothorax apparatus. A study of 82 consecutive patients recommended for pneumothorax treatment at Sea View Hospital, Staten Island, N. Y., revealed that the condition of the lungs and the size of the needle used are the two principal factors determining the extent of the traumatic pneumothorax. The smaller needle, resulting in less trauma, gives a smaller collapse. In 67 initial pneumothoraces the collapse obtained with a large needle was approximately twice that noted with a small needle. With moderate pulmonary involvement the size of the needle is of minor importance, since excessive collapse and dyspnea are uncommon. In 16 cases of bilateral disease in which pneumothorax was induced with a small needle 3 patients became dyspneic, 1 requiring deflation. In 14 similar cases induced with a large needle 8 became dyspneic and 4 of them required deflation. In patients with extensive disease, the dangers of induction of the initial pneumothorax may be minimized by the use of a small gage needle. In cases of bilateral disease its use appears essential if a manageable collapse is to be obtained.

Pulmonary Resection for Tuberculosis.—In the surgical management of over 1,000 cases of pulmonary tuberculosis, Brewer and his co-workers performed lobectomy in 26 cases and pneumonectomy in 14 cases. After lobectomy 12 patients were apparently well with negative sputum; 8 patients were alive with positive sputum and 6 patients died, 3 soon after operation and 3 later. In the pneumonectomy series 6 patients were apparently well with negative sputum; 3 were alive with positive sputum and 5 died, 2 early after operation and 3 later. The total mortality in these 40 cases was 27.5 per cent (11 deaths). This represents a hopeless group of cases in which for the most part thoracoplasty had failed and no other treatment would cure. Primary pulmonary resection is preferred to thoracoplasty for lower and middle lobe cavities, tuberculomas and blocked cavities, persistent bronchostenosis and symptomatic bronchiectasis. With these exceptions the authors prefer thoracoplasty to lobectomy and pneumonectomy in the treatment of pulmonary tuberculosis. The mortality from thoracoplasty is considerably lower than from pulmonary resection and the late results of resection seem to offer no better chance of permanent cure. When thoracoplasty fails, revision thoracoplasty, creation of extrapleural space followed by packing, and cavity drainage should be considered before performing pulmonary resection; in some cases no further surgical treatment should be considered. In selecting any case for pulmonary resection the surgeon must be certain that the patient has sufficient pulmonary reserve. The type of disease most amenable to lobectomy and pneumonectomy is that characterized by fibroid and caseating lesions of the lung in which the mode of spread is principally by way of the bronchus. Primarily, hemotogenous or lymphogenous disseminated pulmonary tuberculosis is a contraindication to resection. Pulmonary resection has a definite place in the surgical treatment of pulmonary tuberculosis in salvaging otherwise hopeless cases.

Illinois Medical Journal, Chicago

94:1-80 (July) 1948

Medicine's Frankenstein Monster. A. S. Johnson.—p. 2.

94:81-148 (Aug.) 1948

Problems of Medical Care in Atomic Age. H. C. Lueth.—p. 93.
Clinical Application of RH Factor. E. T. McEnery, G. R. Baba and K. Togasaki.—p. 99.
Conservative Obstetrics. E. E. Davis.—p. 103.
*Phenylpyruvic Oligophrenia: Report on 16 Clinical Cases and 2 Autopsies. H. Josephy.—p. 107.
Subacute Bacterial Endocarditis Treated with Streptomycin. J. N. Bell.—p. 119.

Phenylpyruvic Oligophrenia.—Josephy points out that the mental deficiency referred to as phenylpyruvic oligophrenia was first described in 1934 by Foelling of Oslo. The author reviews observations on 16 cases observed at the Lincoln State School and Colony at Lincoln, Ill. These 16 patients included three pairs of siblings. The occurrence of several cases in one family has been noted by other observers and suggests the hereditary nature of the disorder. The patients excrete phenylpyruvic acid in the urine and are feebleminded. All 16 of the author's patients were fair haired, although some had dark parents and siblings. The skin of all these patients is poorly pigmented and is to some degree photosensitive. Fourteen of the 16 patients may be classified as low idiots. Only 2 are on the imbecile level. The phenylpyruvic idiots are restless and jerky; their gait is clumsy and gives the impression of some spasticity. Frequently the body is kept slightly bent and stooped, suggesting rigidity. The examination of the reflexes and of the tonus reveals no pathologic changes except somewhat vivid tendon reflexes. The author was able to perform necropsies on 2 of the patients, but nothing unusual was found. There is no satisfactory explanation as to why defective metabolism of phenylalanine is always combined with a low grade mental deficiency.

Pennsylvania Medical Journal, Harrisburg

51:1073-1184 (July) 1948

Treatment of Carcinoma of Larynx and Its Association with Development of Laryngology. E. N. Broyles.—p. 1089.
Role of Extraperitoneal Cesarean Section in Infected Labor. E. G. Waters.—p. 1093.
Circulatory Disease Affecting the Skin. W. Guy Jr.—p. 1098.
Early Diagnosis and Treatment of Cancer of Prostate. D. M. Davis.—p. 1101.
Renal Pathology Without Renal Symptoms. W. A. Barrett.—p. 1104.
Neurodermatoses: Their Concept and Management. H. W. Woolhandler.—p. 1108.
Roentgen Diagnosis of Tumors of Urinary Tract. P. C. Swenson and F. F. Hart.—p. 1114.
Diagnosis and Treatment of Bronchiectasis. G. E. Spencer and E. M. Kent.—p. 1122.

Rhode Island Medical Journal, Providence

31:413-468 (July) 1948

Neurologic Aspects of Poliomyelitis. H. R. Viets.—p. 427.
Challenge of Medicine in Atomic Era. E. L. Bortz.—p. 430.
New Technic in Radical Cure of Hydrocele. V. J. Oddo.—p. 433.
Fundamentals of Staff Organization. C. F. Wilkinson Jr.—p. 437.

31:469-532 (Aug.) 1948

Industrial Health. P. Drinker.—p. 483.
Continuous Lumbar Peridural Anesthesia in Obstetrics. H. W. Umstead and W. J. Dufresne.—p. 489.

Rocky Mountain Medical Journal, Denver

45:537-622 (July) 1948

Distribution of Physicians and Physicians' Services in Colorado, 1948. H. J. Dodge, M. M. Clapper and W. Darley.—p. 557.
Inter-Innomino-Abdominal Amputation. J. T. Jacobs and R. Woodruff. —p. 564.
Ulcer Problem. P. Thorek.—p. 567.
Use of Diagnostic and Therapeutic Facilities. H. J. Corper.—p. 573.
Liver Function Tests: Appraisal of Value and Sensitivity of Two Newer Tests as Screening Procedures. R. W. Truscott.—p. 578.

45:623-727 (Aug.) 1948

Discussion of Nucleus of Atom. K. D. A. Allen.—p. 645.
Common Physical Manifestations of Tension Causing Difficult Diagnostic Problems for General Practitioner. W. C. Menninger.—p. 655.
Immortality of Inspiration. W. J. Kerr.—p. 666.
Treatment of Epilepsy: An Abstract. H. Hunter.—p. 669.

Southern Medical Journal, Birmingham, Ala.

41:667-760 (Aug.) 1948

Contact Dermatitis: Results of 312 Patch Tests, with Observations on Technic. O. Swineford Jr. and Peggy Jean Radford.—p. 667.
*Bowel Healing as Influenced by Intestinal Antiseptics. E. J. Poth. —p. 672.
*Miliary Tuberculosis: Response to Streptomycin. P. B. Johnson and R. S. Sitkin.—p. 678.
Pneumoperitoneum in Treatment of Pulmonary Tuberculosis. H. G. Whitehead.—p. 681.
Treatment of Carcinoma of Lip with High Voltage X-Ray. H. B. Ivey. —p. 685.
Hypoprothrombinemia and Vitamin K Therapy in Acute Coronary Occlusion: Autopsy Finding. H. M. Doles.—p. 688.
Importance of Complement Fixation Test in Amebic Hepatitis and Liver Abscess. L. L. Terry and J. Bozicevich.—p. 691.
Anesthetic Management of Patients During Vagotomy, Dorsal Sympathectomies and Operations upon Esophagus. L. H. Mousel.—p. 702.
Cytology: Diagnostic Method in Early Carcinoma of Cervix. R. E. Seibels.—p. 706.
Pathology of Early Carcinoma of Cervix, Status of Preinvasive Cancer: Study of 155 Cases. E. R. Pund, J. B. Nettles, F. Dick Jr. and E. S. Cardwell.—p. 711.
*Penicillin, Streptomycin, Dicumarol and Blood Coagulation: Thromboplastic Properties of Penicillin. D. I. Macht.—p. 720.
Chronic Secretory Otitis. W. T. Hotchkiss.—p. 727.
Epidemic Myalgia. A. M. Harvey, P. A. Tumulty, F. B. Bang and W. B. Leftwich.—p. 732.
Surgical Jaundice. H. Acuff.—p. 737.
Hepatitis. Modern Concepts. G. S. Mirick.—p. 743.
General Practitioner, Past, Present and Future. J. R. Bender.—p. 746.
Role of Apocrine Sweat Glands in Perianal Tissue. W. L. Cooper. —p. 750.
Placenta Accreta: Two Cases Found at Cesarean Section. J. L. Keyes. —p. 753.

Bowel Healing as Influenced by Intestinal Antiseptics.—Experiments carried out by Poth and his co-workers on dogs to test the variation of the ability of the distal portion of ileum to survive and ultimately to heal after extensive damage to the blood supply of long segments of the bowel showed that after the administration of full therapeutic doses of succinylsulfathiazole or phthalylsulfathiazole for two weeks, 50 per cent of the animals lived after arterial ligation, 70 per cent lived after vein ligation, and 55 per cent survived after simultaneous ligation of both the arteries and the veins. It is suggested that the sulfonamide drugs protect the tissues of the ileum from massive necrosis by modifying the bacterial flora to such a degree as to prevent extensive infiltration of the bowel wall by bacteria which would then cause thrombosis of the capillaries. As a consequence the residual circulation was sufficient to protect the tissues against the necrotizing action of an attenuated bacterial flora. A similar mechanism probably explains the difference observed in healing at the line of bowel anastomosis in treated and untreated animals. Both open and closed technics of anastomosis of the colon were studied in a well controlled series of experiments on dogs. In the control experiments wound infection, peritonitis, stitch abscess and local soft tissue infections were the usual observations, while in those instances in which adequate treatment with succinylsulfathiazole or phthalylsulfathiazole was given, evidence of infection was seldom encountered. Grossly there was minimal edema of the mucosa in treated animals in contradistinction to extensive edema in the controls. Microscopically, the control specimens showed acute inflammation characterized by extensive edema, leukocytic infiltration and delayed revascularization and fibroplasia, while the specimens taken in the cases in which treatment was given exhibited slight inflammation which subsided rapidly and was characterized by moderate edema, limited leukocytic infiltration and rapid revascularization and orderly fibroplasia. The addition of streptomycin to the sulfonamide therapy did not alter the healing process materially.

Streptomycin in Miliary Tuberculosis.—Johnson and Sitkin report 1 case of miliary tuberculosis in a woman aged 26 who responded to treatment with 135 Gm. of streptomycin over a period of sixty-seven days. The patient presented in the right axilla a mass 3 cm. in diameter, freely movable, firm and nontender. Microscopic examination of aspirated material showed caseation necrosis, giant cell formation and leukocytic infiltration compatible with caseous tuberculosis. On the twenty-fourth day of treatment with streptomycin radical excision of the right axillary nodes was performed. The postoperative course was uneventful, with firm healing of the incision by primary union. Although excision of tuberculous lesions is generally contraindicated, it is conceivable that radical excision of accessible tuberculous foci may be feasible and rational while streptomycin is being given, as was demonstrated in this case. The patient was discharged from the hospital in July 1947, and was readmitted in May 1948 for reevaluation. She had remained well and asymptomatic and had gained 23 pounds (10.4 Kg.). There was no clinical or laboratory evidence of active tuberculosis.

Drugs for Blood Coagulation.—Experiments performed by Macht on rabbits, cats and dogs showed that all penicillin preparations on the market shorten the coagulation time of the whole blood as well as the prothrombin time. The same effect of penicillin injections on the blood clotting was obtained in several patients selected at random from the surgical clinic of the Sinai Hospital, Baltimore. Amorphous penicillin was more effective in this respect than the newer colorless crystalline preparations on the market, because of the four crystalline active principles of penicillin X and K are more thromboplastic than G and F. Such thromboplastic properties were observed not only after intravascular injections but also after intramuscular injections either of aqueous solutions of penicillin or of penicillin solutions in peanut oil. It was observed even after administration of buffered penicillin tablets by mouth. Experiments with streptomycin showed that this drug also definitely shortened the coagulation time in rabbits and in cats. Experiments revealed that the excessive thromboplastic effects arising from intensive penicillin therapy with massive doses predisposing to intravascular thrombotic accidents can be antagonized by suitable doses of "dicumarol." In animals receiving large doses of "dicumarol" and thus acquiring an extremely prolonged prothrombin and coagulation time and hemorrhagic tendencies, the danger of hemorrhage was effectively controlled by injections of penicillin, which is not toxic for animals. Thus penicillin and "dicumarol" are mutually complementary and corrective; each of them corrects and controls the undesirable and harmful effects of the other, thus enhancing the usefulness of both in clinical practice.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

56:433-472 (Aug.) 1948

Treatment of Lip Carcinoma. D. V. Trueblood.—p. 433.
X-Ray Study of Contraceptive Diaphragm in Vagina. A. P. Hudgins and W. P. Elkin.—p. 437.
Effect of Pitressin Tannate in Oil on Uterine Bleeding: Therapeutic Rationale. R. C. Benson.—p. 440.
Original Communication—Vagino-Abdominal Subtotal Hysterectomy. J. B. Casale.—p. 446.
Undeveloped Secondary Embryo as Cause of Hemorrhage in Puerperium. M. Leff.—p. 448.
Control of Ovarian Activity. H. H. Cole.—p. 451.
Ocular Manifestations of Pregnancy. M. J. Drell.—p. 455.
Pregnenolone in Male Infertility. E. T. Tyler, S. Payne and Hazel Kirsch.—p. 459.
Perineal Repair: Method of Suturing. R. D. Dunn.—p. 464.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

21:319-372 (July) 1948

Advances in Design of X-Ray Diagnostic Equipment. A. Nemet. —p. 319.

Chromophobe Adenoma of Pituitary: Evaluation of Its Treatment and Some Case Reports. W. G. Evans and G. Picciotto.—p. 330.

Vacuum Intervertebral Disks. E. Samuel.—p. 337.

Case for Diagnosis. F. Retief.—p. 340.

Armillifer Armillatus: Note on Three Cases of Calcification of Cysts in Man. G. M. Ardran.—p. 342.

Volvulus of Cecum. H. Jungmann.—p. 346.

Geiger-Müller Counter for Measuring Beta-Ray Activity *of Liquids*, and Its Application to Medical Tracer Experiments. N. Veall.—p. 347.

Theoretic Study of Results of Ionization Measurements in Water with X-Ray *and* Gamma-Ray Beams: Part II—Discussion on Results of Calculations and Comparison with Experiment. L. F. Lamberton. —p. 352.

British Medical Journal, London

2:119-186 (July 17) 1948

Agents Determining and Influencing Functions of Pars Nervosa of Pituitary. E. B. Verney.—p. 119.

Use of Post-Pituitary Extract in Physiologic Amounts in Obstetrics: Preliminary Report. G. W. Theobald, A. Graham, J. Campbell, P. D. Gange and others.—p. 123.

*Subtotal Colectomy and Colectomy in Ulcerative Colitis. *H. Devine* and *J. Devine.—p. 127.*

Death from Inhibition, and Its Relation to Shock: Critical Survey. A. I. Kayssi.—p. 131.

Cremasteric Vessels and Repair of Indirect Inguinal Hernia. E. S. R. Hughes and J. T. Fathi.—p. 135.

Hodgkin's Disease: Unusual Case with Spinal Symptoms. O. D. Beresford and N. G. B. McLetchie.—p. 136.

Colectomy in Ulcerative Colitis.—The Devines present observations on 11 advanced and desperate cases of ulcerative colitis, for which radical surgical treatment was planned. Two of the 11 patients died. One died of an adynamic ileus immediately following the first stage modified enterostomy, and 1 three months after the first stage from tissue deficiency and toxemia. None of the patients died after colectomy or excision of the rectum. Thus, of 11 desperately sick patients, 6 survived subtotal or near-colectomy, 1 a near-colectomy combined with excision of the rectum, 1 a partial colectomy involving two thirds of the colon, and 1 the first stage of colectomy. Six patients seem to be cured (the worst case of all for six years). They have no bowel discomfort and live normal lives. One patient has only two motions a day and none at night. Most of the patients have from four to five motions in twenty-four hours. The authors look forward to the use *of colectomy in* earlier cases and less debilitated patients.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

55:261-400 (June) 1948

*Use of "Phase-Contrast" *Microscope in* Clinical Gynecology: Preliminary Report. A. Culiner and J. Gluckman.—p. 261.

Procidentia Complicated by Intestinal Strangulation in Pouch of Douglas Hernia. T. F. *Redman.—p. 268.*

Hysterosalpingography *Employing* Water-Soluble Contrast Medium. D. Jefferiss.—p. 270.

Inactivation of Estrogenic *Hormone* by Women with Vitamin B Deficiency. B. Zonder *and A. Brzezinski.—p.* 273.

Evolution and Growth *of* Tadpoles by Feeding Vernix Caseosa, Progesterone and Folliculin. L. *Lajos and* F. Szontagh.—p. 281.

Demonstration by *Infra-Red Photography* of Superficial Veins in Pregnant and *Non-Pregnant Woman.* K. Bowes, S. H. Riterband and J. E. Andrews.—p. 285.

William Harvey—"Father of British Midwifery." R. W. Johnstone. —p. 293.

Vaginal Hysterectomy for Cancer of Uterus and Vagina. J. Trapl. —p. 303.

"Mesodermal Mixed" *Tumor of Uterus.* C. E. M. Blumer and J. L. Edwards.—p. 309.

Difficult Dilatation. A. E. Chisholm.—p. 317.

Case of Extrauterine Pregnancy. Phyllis Dingle.—p. 318.

Hydatidiform Mole *in Fallopian Tube.* J. A. Chalmers.—p. *322.*

Acute Crises in Chronic Hemolytic Anemia Induced by Pregnancy. Y. M. Bromberg, R. Toaff and E. Ehrenfeld.—p. 325.

"Phase Contrast" Microscope in Clinical Gynecology.—Culiner and Gluckman draw attention to the phase contrast microscope, which is a recent innovation in microscopy. The physical principles of this instrument were described by Richards in 1944. The *phase contrast microscope* has an immediate, direct use in the study and diagnosis of gynecologic tissues obtained by aspiration, curettage or smear. The material was obtained from patients in private practice and from the clinics and wards under the jurisdiction of the department of gynecology, University of the Witwatersrand. This tissue was removed by pipet, blunt spoon-shaped small curet, or by scraping the vagina or cervix with the gloved finger. Thereafter, a suspension of the tissue was made in Ringer's solution. This solution was found to be a satisfactory medium for the tissue cells, particularly if rapidly cooled pending examination. The examination of this tissue is best carried out within an hour of its removal. A single small drop of the agitated fluid is removed on to a clean slide and is covered with a glass cover slip. The edges of the cover slip are sealed with petrolatum to minimize fluid currents and desiccation. The tissue is then ready for examination. While photographic reproduction is unnecessary for observation and diagnosis it has been used extensively in these studies for purposes of record, and subsequent presentation. The authors lay down no specific features by which the identity of various cells may be established, but in the case of malignant lesions, or at least in the cells derived from tissues of proved malignancy, those stigmas by which they may be broadly differentiated from normal cells are indicated. Because tissues can be observed while the patient is being examined clinically, and because these tissues require no fixation or staining in order to show greater details of cell structure than by any other method in current use, it is considered that application of the instrument should constitute a significant advance in the early recognition of cancer.

Journal of Physiology, Cambridge

107:245-382 (June) 1948. **Partial Index**

Effects of Sucrose on Gruel Fractional Test Meals. J. N. Hunt and W. R. Spurrell.—p. 245.

Relationship Between Change in [illegible] Subjective Dark-Adaptation Curve. G. Karpe a[illegible] 272.

Mechanism of Hemostasis in Peri[illegible] and C. Tsai. —p. 281.

Action of Acetylcholine and Adrenaline on Flexor and Extensor Movements Evoked by Stimulation of Descending Motor Tracts. E. Bülbring, J. H. Burn and C. R. Skoglund.—p. 289.

Effects of Small Amounts of Carboxyhemoglobin on Determination of Oxygen in Blood by Haldane and Van Slyke Methods. F. C. Courtice and W. *J. Simmonds.*—p. 300.

Some Effects of Nicotine-Like Substances and Their Relation to Sensory Nerve Endings. G. L. Brown and J. A. B. Gray.—p. 306.

Some Properties of Amarin, with Special Reference to Its Use in Conjunction with Adrenaline for Production of Idio-Ventricular Rhythms. F. N. Fastier and F. H. Smirk.—p. 318.

Oxidation of Hemoglobin to Methemoglobin by Oxygen. J. Brooks. —p. 332.

Presence of Peptic Synergist in Gastric Juice: Its Importance in Estimation of Proteolytic Activity of Gastric Juice. J. N. Hunt.—p. 365.

Acetylcholine Synthesis in Different Regions of Central Nervous System. W. Feldberg and M. Vogt.—p. 372.

Lancet, London

2:85-128 (July 17) 1948

Movement of Diaphragm After Operation. J. Howkins.—p. 85.

Rapid Determination of Urinary Pregnandiol: Method Suitable for Routine Clinical Use. I. F. Sommerville, G. F. Marrian and R. J. Kellar.—p. 89.

Treatment of Thoracogenic Brain Abscess. J. B. Pennybacker and T. H. Sellors.—p. 90.

*Weil's Disease: Analysis of 195 Cases in England. J. C. Broom and J. M. Alston.—p. 96.

Acute Intestinal Ostruction in Typhoid Fever. F. F. Kane.—p. 97.

Syringomyelia Temporarily Relieved After Scalenotomy. J. M. Potter. —p. 98.

Weil's Disease.—Broom and Alston reviewed 195 cases of leptospirosis which were diagnosed by serologic tests. The diagnostic criterion was the agglutination of a culture of Leptospira icterohemorrhagiae treated with formaldehyde solution which was observed by the microscopic technic described by Schüffner and Mochtar. Of 189 cases, 181 were in males. This probably reflects the greater risk of infection in certain predominantly male occupations and avocations and does not indicate a real difference in susceptibility. The proportion of females is much higher when chances of infection are equal for the two sexes. The prevalence of Weil's disease among coal miners, fish cleaners and workers in sewers and on the land has long been recognized; so has its occurrence after bathing in canals and stagnant rivers. The mortality rate was high in this group; of 114 patients 25 died, a rate of 22 per cent, compared to 9.4 per cent reported for Holland. The jaundice rate likewise was unusually high, the anicteric cases accounting for only about 10 per cent of the total. The authors believe that many cases of leptospirosis are missed, because they do not present the classical symptoms or the patient was not employed in one of the occupations recognized as carrying a risk of infection.

Medical Journal of Australia, Sydney

1:781-808 (June 26) 1948

Progress in Pediatrics. L. Dods.—p. 781.
The Psychiatrist and Society. Irene Sebire.—p. 791.
*Poliomyelitis and Gastric Acidity. Phyllis G. Ashworth.—p. 793.
Effect of Electrolytes on RH Agglutination Reaction. R. J. Walsh. —p. 793.

2:1-28 (July 3) 1948

Social Health and Psychiatric Service. A. Stoller.—p. 1.
China's Struggle for Medical Progress. B. Kroker.—p. 8.
Organization of Modern Medicine in China. H. O. Chapman.—p. 10.
Education of Deaf Children. W. E. Johnson.—p. 13.

Poliomyelitis and Gastric Acidity.—Ashworth investigated the gastric acidity of persons over 10 years of age who contracted poliomyelitis in the 1945-1946 epidemic. Examinations were made approximately one year after the onset of disease, during the summer and autumn of 1946-1947. Of the 228 survivors over 10 years old, 91 were investigated. No evidence was found that gastric acidity of the population with poliomyelitis has a different distribution from that of a normal population.

Practitioner, London

161:1-72 (July) 1948. Partial Index

Modern Concept of Social Medicine. J. A. Ryle.—p. 5.
National Health Service Act. A. L. Banks.—p. 11.
Social Medicine in United States of America. L. H. Bauer and W. W. Bauer.—p. 21.
New Zealand State Medical Service. A. E. Porritt.—p. 29.
Recognition and Management of Psychiatric Disorders in Field of General Medicine. I. Skottowe.—p. 39.
Residual Dilatation of Upper Urinary Tract Following Pregnancy. R. E. Norrish.—p. 47.
Sunburn: Prevention and Treatment. E. W. P. Thomas.—p. 49.

Thorax, London

5:53-128 (June) 1948

Cardiospasm. G. H. Wooler.—p. 53.
Treatment of Pulmonary Hydatid Disease. M. P. Susman.—p. 71.
*Liver Biopsy in Sarcoidosis. J. G. Scadding and Sheila Sherlock.—p. 79.
Recurrent and Chronic Spontaneous Pneumothorax. R. C. Brock.—p. 88.
Pneumonia in North-West London, 1942-4: I. Bacterial Pneumonias. J. H. Humphrey, H. Joules and E. D. Van Der Walt.—p. 112.
Influence of Costal and Abdominal Pressure on Action of Diaphragm in Normal and Emphysematous Subjects. H. Herxheimer.—p. 122.
Hemorrhage After Extrapleural Pneumonolysis. W. P. Cleland.—p. 127.

Aspiration of Liver in Sarcoidosis.—According to Scadding and Sherlock no agreement has been reached about the causation of the syndrome known as sarcoidosis, Besnier-Boeck-Schaumann disease, lymphogranulomatosis benigna or noncaseating tuberculosis. In 1943 van Beek and Haex first drew attention to the possible value of aspiration of the liver in providing material for the histologic diagnosis of sarcoidosis. They reported that in 2 out of 4 cases presenting features of this syndrome they had been able to find characteristic changes in the material obtained by aspiration of the liver, although in neither of them had there been clinical evidence of hepatic involvement. Subsequently van Buchem in 1946 published a series of 14 cases in which aspiration of the liver was performed, with positive results in all. In view of the controversy about the relation between sarcoidosis and tuberculosis van Buchem also carried out biopsy of the liver in 9 cases of active pulmonary tuberculosis. In none were specific changes found. The authors report 3 cases with clinical manifestations of sarcoidosis, in which characteristic changes were found in liver tissue obtained by aspiration, and a fourth in which similar changes were an incidental finding in a biopsy specimen from the liver of a patient showing no other evidence of this syndrome. The first 3 cases were the only ones the authors saw in two years in which the clinical aspects suggested sarcoidosis, and in all of them lesions were found in the liver by aspiration biopsy. In 2 of them the diagnosis was also confirmed by biopsy of lymph nodes, but in the third the biopsy specimens from the liver alone gave histologic proof of the diagnosis. Taking into consideration these cases as well as those reported by van Beek, Haex and van Buchem, one can see that of 21 cases diagnosed clinically as sarcoidosis, 16 showed typical lesions in the liver. The fourth case was detected in 450 biopsies of the liver in patients with a variety of diseases. This lesion might be a single miliary tubercle, but the good general condition of the patient and the absence of other evidence of active tuberculosis are more in keeping with the view that it was of sarcoid type.

Chirurg, Heidelberg

19:193-240 (May) 1948. Partial Index

*Resection of Femoral Artery in Disturbances of Blood Perfusion of Leg. F. Bernhard.—p. 193.
Pathogenesis of Generalized Carcinosis. F. Stelzner.—p. 203.
Experiences with Peridural Anesthesia. P. Mellin.—p. 210.
Surgical Methods of Extrasphincteral Fistulas of Rectum. G. Arndt. —p. 214.
Abduction Contracture in Shoulder Joint. T. Cellarius.—p. 221.

Resection of Femoral Artery.—According to Bernhard, disturbance in the blood perfusion of the legs is often caused by thrombosis of the femoral artery. Observations, particularly in the course of operations on aneurysms, convinced him that not every thrombosis of the femoral artery will lead to a disturbance in the blood perfusion. The disturbance in the blood perfusion may take place in both legs, although only in one leg is the artery obliterated. Treatment consists in excision of the diseased artery. After this excision, pains and disturbances in the blood perfusion cease first on the contralateral side, and only after several hours have elapsed does the same process take place on the side that has been operated on. Thrombosis of the femoral artery is usually detected on both sides, since this concurrence has been watched for. The obliteration of the femoral artery is not the only cause of the disturbance in blood perfusion; an irritation existing in the wall of the obliterated vessel is the chief cause. This irritation can lead at the same time to vasoconstriction and involvement of the other side as well as to disturbances in the entire sympathetic nervous system. It has been proved by histologic studies that ordinary arteriosclerosis may lead to thrombosis of the femoral artery. Resection of the artery produces the best results in arteriosclerosis. Results are less favorable in cases of arteritis of various origins and are poorest in endangiitis obliterans. For this reason, simultaneous resection of the lumbar sympathetic is advocated in the latter cases. Arterial resection can be attempted also in case of ulceration and of threatening gangrene. The collateral vessels must be preserved as much as possible, whereas the diseased femoral artery must be removed as extensively as possible. The throttling of the collaterals is abolished by this operation and active vasodilatation is induced in the peripheral regions, because the thrombosed artery which acted as a vasoconstrictor has been removed. The author presents several illustrating case histories.

Día Médico, Buenos Aires

20:1501-1527 (July 22) 1948. Partial Index

*Mitral Rheumatic Disease and Multiple Cerebral Embolism. M. Manguel. —p. 1501.

Mitral Rheumatic Disease with Multiple Cerebral Embolism.—A man 50 years of age suffered repeated attacks of rheumatic fever from childhood. Cardiac symptoms appeared at the age of 38. The clinical symptoms and electrocardiographic changes demonstrated mitral stenosis. Since the age of 40 the patient presented neurologic symptoms which seemed to be due to multiple cerebral embolism. Early in course of the disease the neurologic symptoms, which followed appearance of precordial pain, consisted of acute pain in the left temple and in the left shoulder, followed by spasms of the left arm and of the head and transient facial paralysis. Later arrhythmia and auricular fibrillation occurred. The neurologic symptoms consisted of left spastic hemiplegia, aphasia and Cheyne-Stokes respiration. In both instances the neurologic symptoms improved on administration of antispasmodic and vasodilating drugs. The patient is kept on the Schemm diet. Treatment consists of digitalis, oxygen inhalations and injections of papaverine in doses of 0.10 Gm. given every six hours. Massage therapy and progressive slow reeducation will be indicated if aphasia regresses.

Maandschrift voor Kindergeneeskunde, Leyden

16:133-166 (May) 1948. Partial Index

Small Epidemic of Virus Diarrhea in New-Born Infants. A. van Westrienen.—p. 136.
*Hypervitaminosis D. C. Hooft and G. van Haeschrouck.—p. 143.
Diagnosis and Treatment of Staphylococcic Pneumonia and Empyema and Their Complications. W. K. Dicke.—p. 154.
Penicillin in Treatment of Congenital Syphilis. S. J. de Jong.—p. 161.

Hypervitaminosis D.—Hooft and Haesebrouck observed in some infants and children who came to their clinic typical signs of D hypervitaminosis. Massive single doses of 15 mg. of vitamin D are justified for the treatment of active rickets or tetany or for the prevention of rickets, but it was found that this large dose had been given, without justification, repeatedly, every month or even every week, to children with tuberculosis, chronic bronchitis, anemia or anorexia or to children who appeared weak. Although disturbances caused by this medication usually disappear after administration is stopped, there are cases in which serious complications and even death have resulted. The authors report 2 cases, one of which terminated in death. Both infants had slight anemia, hypercalcemia, hypercholesteremia and increased urea in the blood. Hyperphosphatemia was observed in the first case only. Protein levels proved to be high in both cases. In the first case roentgenologic examination revealed calcification of the epiphysial zone, thickening of the cortex of the long bones and renal opacity. In both cases the T wave was slanted in the electrocardiogram. Necropsy in the fatal case showed severe lesions of the heart, the kidneys, the blood vessels, the stomach and the meninges. Microscopic examination suggested hypofunction of the thyroid. The authors direct particular attention to the hypercholesterolemia. On the basis of their observations and of experimental work by Goormaghtigh the authors conclude that thyroid preparations may be helpful in the treatment of hypervitaminosis D.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

92:1581-1672 (May 29) 1948. Partial Index

Organic and Functional Hypoglycemias. A. J. M. Lohman.—p. 1595.
Pneumarthrography as Diagnostic Aid in Determination of Lesions of Meniscus. J. Paré.—p. 1607.
Clinical Observations on 87 Patients with Leprosy. R. D. G. P. Simons.—p. 1612.
*Anti-M-Antibodies and Latent N-Receptors in Human Subjects. L. A. M. van der Spek and L. de Kromme.—p. 1619.

Anti-M Antibodies and Latent N Receptors in Human Subjects.—When the usual cross matching test between the patient's serum and the donor's erythrocytes was carried out on a woman in preparation for a blood transfusion, van der Spek and de Kromme detected an incompatibility of blood groups outside of the ABO system of blood groups. The incompatibility seemed to be due to the presence of anti-M antibodies in the serum of the patient, whose blood type was N. The anti-M antibodies were probably congenital and without pathologic significance. This case again demonstrates the great importance of the cross matching test before a transfusion is given. In newborn infants N antigen may not be developed or may be developed to such a slight degree that a wrong blood type may be registered. In excluding paternity by means of the M or N blood type this possibility has to be reckoned with, and also the occurrence of certain M and N receptors which react with only a limited number of anti-M and anti-N serums.

Nordisk Medicin, Stockholm

39:1311-1342 (July 9) 1948. Partial Index

*Familial Epidemic of Polyneuritis. J. J. Wickström.—p. 1313.
Penicillin Treatment in Diphtheria. F. Haadem.—p. 1316.
Initial Symptoms in Rheumatic Fever. E. Jacobson.—p. 1319.
Frei's Reaction—Important Diagnostic Aid in Rectal Strictures G. A. Hansen.—p. 1321.

Familial Epidemic of Polyneuritis.—In the epidemic reported by Wickström a disorder dominated in the initial stage by gastrointestinal symptoms set in in all 10 members of a family and after a latent period of twelve to forty-five days was followed in 8 by polyneuritis of varying intensity. An alimentary infection is considered probable.

Revue Médicale de Liège

3:357-400 (Aug. 1) 1948. Partial Index

*Treatment of Thyrotoxicosis with Antithyroid Agents. L. Brull and L. Lefebvre.—p. 357.
Synthetic Antithyroid Agents. L. Lefebvre.—p. 370.
Changes of Blood Formula in Course of Treatment with Antithyroid Agents: Some Clinical Cases. A. Nizet.—p. 387.

Antithyroid Agents in Thyrotoxicosis.—Brull and Lefebvre treated 113 patients between the ages of 18 and 72 who had thyrotoxicosis, with various antithyroid agents; 7 patients were given thiourea with an average daily dose of 0.80 Gm., 26 thiouracil with an average daily dose of 0.60 Gm., 7 methylthiouracil with an average daily dose of 0.40 Gm., 26 propylthiouracil with an average daily dose of 0.30 Gm., 26 aminothiazole with an average daily dose of 0.30 Gm., and 21 were given treatment with several of these drugs. In 6 patients (5 per cent) treatment failed. Three patients (3 per cent) showed intolerance. Excellent results were obtained in 58 patients (51 per cent). Less satisfactory results were obtained in 46 patients (41 per cent) who presented recurrences, partial persistence of symptoms, mild thyroid hypertrophy (6 cases), and transitory myxedema. An occasional granulocytosis should be guarded against, although it was not observed by the authors. Except for this limitation, the administration of antithyroid agents may be considered as a method of treatment which gives highly satisfactory results, although it is a more tentative method of treatment than surgical intervention or roentgen therapy. It has the advantage that it does not cause irreversible changes of the anatomy or physiology of the thyroid.

Sang, Paris

19:257-320 (No. 5) 1948. Partial Index

Eosinophile Granuloma of Skin. A. Nanta and J. Gadrat.—p. 257.
Origin of Howell-Jolly Bodies and of Cabot's Ring Bodies. G. Discombe.—p. 262.
Risk of Folic Acid Treatment in Biermer's Disease. J. Messerschmidt.—p. 274.
Lymphoblastosis Associated with Pertussis. J. Bernard.—p. 279.
*Study of 10 Cases of Late Hypochromic Anemia Observed in 1947, 6 of Which Secondary to Diaphragmatic Hernia. J. Mallarmé and R. Tilquin.—p. 282.

Hypochromic Anemia.—Mallarmé and Tilquin report 10 patients, 3 men and 7 women between the ages of 32 and 72, with hypochromic anemia. In all cases the hemoglobin level was low, but in some cases the number of the red blood corpuscles was nearly normal, varying frm 3,950,000 to 4,500,000, while they were low in others (varying from 1,450,000 to 1,700,000). Nucleated red blood corpuscles were not observed. Examination of the bone marrow revealed an association of large proerythroblasts (macroblasts) with small erythroblasts presenting a pale protoplasm; this association may be considered as responsible for giving rise to hypochromic anemia. In 9 patients the chlorosis was secondary, due to cancer, to hemorrhoids and to metrorrhagia respectively in 3 cases and to diaphragmatic hernia in 6 cases. These 6 latter cases were characterized by anisocytosis and poikilocytosis associated with a low hemoglobin level but with little alteration in the number of the erythrocytes. Normal chemical composition of gastric contents was demonstrated in 3 of these cases in which gastric aspiration was done. Recovery of all patients with secondary hypochromic anemia due to diaphragmatic hernia resulted from treatment with iron. Surgical treatment was omitted in all of them because of the advanced age of the patients. Only 1 patient had primary hypochromic anemia; there were Hunter's tongue, anachlorhydria, severe dyspeptic disturbances and anemia with a low hemoglobin level and low number of erythrocytes. Recovery resulted from treatment with iron, but with higher doses and of longer duration than that in the cases of secondary anemia. Primary achylous hypochromic anemia should be considered separately from secondary hypochromic anemias, as Biermer's disease should be distinguished from secondary hyperchromic anemias.

Book Notices

Viral and Rickettsial Infections of Man. Edited by Thomas M. Rivers, M.D., Director of the Hospital, The Rockefeller Institute for Medical Research, New York. Aided by a Grant from the National Foundation for Infantile Paralysis, Inc. Cloth. Price, $5. Pp. 587, with 77 illustrations. J. B. Lippincott Co., 227-231 S. Sixth St., Philadelphia 5, 1948.

Dr. Rivers points out in the preface that knowledge of virus and rickettsial infections of man has developed so rapidly in the past two decades that any book written during that time would have been out of date before publication. Within the past few years ideas have crystallized, and the purpose of this book is to bring this knowledge together so that interested persons not actively engaged in the study of virus and rickettsial infections may be properly informed.

The twenty-seven contributors are all experts in their fields. With so many contributors it is remarkable that the various contributions fit together so well. Under the virus and rickettsial infections a definite pattern is followed with the headings introduction, history, clinical picture, pathogenic picture, experimental infection (host range), etiology, diagnosis, treatment, epidemiology and control measures. The illustrations are excellent and up to date. The small price for this volume is made possible by financial aid provided for the preparation and publication of the volume by the National Foundation for Infantile Paralysis. This authentic book is a must for the libraries of both medical students and physicians.

Lectures on the Liver and Its Diseases Comprising the Lowell Lectures Delivered at Boston, Massachusetts, in March 1947. By H. P. Himsworth, M.D., Professor of Medicine in the University of London, London. Cloth. Price, $5. Pp. 204, with 58 illustrations. Harvard University Press, Cambridge, 38, Massachusetts, 1947.

This monograph is based on a series of lectures delivered at the Lowell Institute of Boston. The author deplores the retention of the word "cirrhosis," preferring to use the term "fibrosis of the liver." This, he feels, will aid in ridding medical thought of the view that the disease is a unity rather than the end result of many types of hepatic injury.

There is a good discussion of the vascular, nutritional, toxic, infectious and infiltrative factors which produce hepatic parenchymal damage. The author believes that the result of damage to the liver depends not so much on the type of agent, but whether the injury is of sufficient severity to destroy the entire lobule rather than the central or midzonal cells alone. If a thin rim of parenchymal cells survives around each portal area, these cells regenerate and restore the lobule within a fortnight. If, however, massive hepatic necrosis occurs, the reticulin framework collapses, fibrosis follows and those few remaining liver cells in the area necessarily undergo concentric hyperplasia with the formation of discrete nodules.

The role of methionine deficiency in liver disease is discussed rather briefly. Deficiency of cystine, perhaps conditioned by tocopherol deficiency, is considered an essential factor in the production of experimental hepatic necrosis. No mention is made of these substances in relation to the human disease.

This monograph should arouse the interest of all students, especially those concerned with the study of hepatic disease.

Medical Writing: The Technic and the Art. By Morris Fishbein, M.D., Editor, Journal of the American Medical Association, Chicago, with the Assistance of Jewel F. Whelan, Assistant to the Editor. Second edition. Cloth. Price, $4. Pp. 292, with 36 illustrations. The Blakiston Co., 1012 Walnut St., Philadelphia 5, 1948.

This book has evolved from a small pamphlet first published in 1910. The present volume is a book of almost 300 pages with much material not available anywhere else. It advises the physician on the preparation of a scientific manuscript, particularly one designed for submission to The Journal of the American Medical Association or any of the special periodicals published by the Association. The various chapters discuss the style of writing, the construction of the manuscript, such simple matters as spelling, capitalization and abbreviations, the preparation of the bibliography and—most important of all—the revision of the manuscript. Special sections deal with illustrations, charts and diagrams, tables and proofreading. The book includes also a list of the periodicals in the *Quarterly Cumulative Index Medicus* and a competent index.

Cirugía estética. *Por el Dr. Ramón Palacio Posse.* Boards. Price, 20 pesos. Pp. 299, with 397 illustrations. Libreria y editorial "El Ateneo," Florida 340—Códoba 2099, Buenos Aires, 1946.

This is an excellent survey of plastic surgery of the esthetic type. It is thorough, comprehensive and well written. After the preliminary introduction and general considerations, the first chapter is devoted to plastic surgery of the nose.

The second chapter concerns itself mainly with surgical technic—the preparation of the surgeon's hands, the patient, anesthesia and postoperative care. A special chapter is devoted to surgical armamentaria.

Chapters 4 through 10 contain a comprehensive analysis of the various types of nasal deformities and the methods used in their correction. Chapter 11 concerns itself with the abnormalities of the ear. Chapter 12 is devoted to a consideration of relaxation of soft structures of the face and the various operations on the lips. This chapter is written in a lucid style and includes consideration of the etiologic factors that produce wrinkles, with special emphasis on the hypertrophic form and evaluation following operations. This is followed by an excellent description of conditions on various parts of the face, such as the eyelids, the surgical treatment of facial paralysis by plastic procedures, defects of the lips, chin, etc.

Chapter 15 is a thorough and informative contribution to the book, dealing primarily with hypertrophies and ptosis of the breasts. The various transposition operations are described. The Thorek technic of transplantation of the nipples is thoroughly elucidated; the author's observations and conclusions complete the chapter.

Chapter 16 deals with esthetic corrections of localized hyperadiposities in the extremities, as well as in the abdominal wall. The work concludes with a discussion of the causation and the treatment of cicatrices, their mode of prevention, the suitable material used in their repair, the formation of keloids, the treatment of atrophic scars and the method of removing tattooing.

This all-embracing work contains a wealth of information; the text is notably free from padding. The illustrations are good.

Respiration et machine humaine. Par le Docteur Nicolas Taptas. Préface du Professor F. Lemaitre. Contribution à la physio-pathologie nasale avec applications cliniques dans les affections nasales et auriculaires et cardio-pulmonaires. Paper. Pp. 221, with 56 illustrations. Librairie Le François, 91, Boulevard Saint-Germain, Paris, 6^e, 1947.

This volume presents in its first half a general survey of the anatomy, histology and functions of the nasal and paranasal structures. The second half, clinical in nature, considers the effects which abnormalities of the upper respiratory passages may exert on the development of the thorax and on respiratory and circulatory function. References to the general literature are few.

Manual of Physical Diagnosis with Special Consideration of the Heart and Lungs. By Ellis B. Freilich, M.D., F.A.C.P., Professor of Medicine, University of Illinois College of Medicine, Chicago, and George C. Coe, M.D., Associate of Medicine, University of Illinois College of Medicine. Revised in collaboration with Joseph K. Freilich, M.D., Adjunct, Mount Sinai Hospital, Chicago. Third edition. Cloth. Price, $5. Pp. 351, with 75 illustrations. The Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1947.

This is a concise and practical manual of physical diagnosis for the use of the student and practitioner especially in daily bedside practice. Special emphasis has been placed on a description of the technic of examination of the heart and lungs. A section has been added to previous editions on examination of the nervous system which should prove of value.

Selected Papers from the Royal Cancer Hospital (Free) and the Chester Beatty Research Institute. Published by Order of the Governors of the Royal Cancer Hospital (Free) London. Vol. IV. [Reprints.] Cloth. Price, 16s. Pp. 381, with illustrations. The Royal Cancer Hospital (Free), Fulham Road, London, S. W. 3, 1943-1944.

These papers provide a striking indication of Britain's ability to maintain medical science through the war period. The subjects range from radiation dosage to fundamental considerations of the biology of differentiating tissue and the correlation of the chemical structure of compounds with their biologic effects. The material is so diverse as to give an excellent cross section of the type of work under way in a cancer institute of the highest type.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

CORONARY DISEASE AND EXERCISE

To the Editor:—Is coronary heart disease less likely to occur in persons who engage in strenuous physical exercise, such as calisthenics, running, swimming and hiking than in those who lead a more sedentary life?

Albert Rubin, M.D., Hartford, Conn.

Answer.—No adequate information exists as yet with reference to the relation of athletic activity and of sedentary life to coronary heart disease. It will be important to gather such statistics in the future. At present, the young persons with coronary heart disease tend to be men of muscular build who are somewhat overweight. This seems to be true whether they are physically active or not. Whether overweight and sedentary life added to a husky build are deleterious or not in this respect has not yet been proved, although such is the opinion of some observers.

INSULIN ATROPHY

To the Editor:—A diabetic patient receives 20 units of protamine zinc insulin daily in her thighs. At the sites of injection fatty tissue atrophy has developed to such an extent that there are huge crater-like tissue defects. Is there anything that can be done to correct this and to avoid its progression from future injections?

M.D., California.

Answer.—Localized atrophy of subcutaneous fat at the site of insulin injections has been reported in 5 to 18 per cent of all patients using insulin. Any type of insulin may cause it. It occurs almost exclusively in females and children. Men almost never exhibit the lesion. The reason is unknown. It is more common in allergic persons but is presumed to be due to the presence of a lipase in the insulin or to abnormal activation by the insulin of a normal lipolytic enzyme in the tissues. Pathologically and chemically it is characterized only by the disappearance of neutral fat. In nondiabetic persons and animals development of insulin atrophies has been reported.

The only harmful effect of the lesions is cosmetic. They may gradually fill in with fat if reinjection of the affected areas is carefully avoided. There is no other effective treatment. Atrophy is less likely to occur if systematic rotation of injection sites is practiced faithfully. Susceptible persons can avoid the undesirable cosmetic results by the use of the abdomen for injections.

The subject is reviewed thoroughly by Alexander Marble in the *Proceedings of the American Diabetes Association,* **2**:171-186, 1942 ("Atrophy of Subcutaneous Fat Following Injections of Insulin").

"ZYLCAINE"

To the Editor:—I saw a patient who had fractures of several ribs. Rather than use the conventional method of treatment with adhesive tape, I did an intercostal block, using "zylcaine," and the patient obtained immediate relief. What are the possibilities of complications arising from the use of "zylcaine"? I refer particularly to later neuritis or abscess formation.

M.D., Illinois.

Answer.—"Zylcaine" is stated to contain in each cubic centimeter procaine base, 0.075 Gm.; butyl aminobenzoate, 0.3 Gm., and benzyl alcohol, 0.25 Gm., dissolved in peanut oil. Anesthesia lasting for from one to four weeks has been reported from its use. It is usually used as rectal anesthesia and seldom for infiltration or nerve block. This combination may be irritating principally because of its content of butyl aminobenzoate, which is a water-insoluble anesthetic not suitable for injection. It is possible, therefore, that prolonged contact of this mixture with nerve trunks could produce chemical neuritis.

Although peanut oil is widely used as a vehicle for oil-soluble medicaments, a number of instances of oil-retention cysts have been reported following the injection of this and other oily vehicles. Probably the exact site of injection and the volume of solution are important determining factors in the production of such cysts.

The recent literature does not contain reports on untoward effects due to this proprietary mixture, but in view of its composition it would not seem unlikely that it might produce occasional instances of neuritis and cyst formation.

FETAL POISONING

To the Editor:—Please describe symptoms and course of strychnine, phosphorus and nitrobenzene poisoning. If a pregnant woman (eight months) were poisoned with one of these, what would happen to the fetus? During what interval before delivery of the baby would one expect no symptoms in the baby—i. e., interval after ingestion of one of these poisons?

M.D., Louisiana.

Answer.—The symptoms of strychnine poisoning are referable to increased reflex excitability of the spinal cord. They consist of repeated attacks of convulsions which involve all the voluntary muscles of the body, including the diaphragm. The tetanic condition of the abdominal muscles and diaphragm arrests respiration, and the asphyxia may be fatal. Strychnine also causes spasms of the gastrointestinal tract and the uterus. These tetanic convulsions recur at intervals, followed by periods of exhaustion. Death may be due to asphyxia or depression. The chief characteristic symptom of strychnine poisoning is the tetanic convulsions.

Phosphorus poisoning occurs in two phases. At first there is local gastrointestinal irritation, with nausea and vomiting. After two or three days the symptoms are due to the poisonous effects of the phosphous on the liver. These consist of hepatic enlargement, intense icterus and metabolic changes.

The onset of symptoms in nitrobenzene poisoning is usually delayed, sometimes for several hours. The symptoms consist of nausea, vomiting, headache, prostration and extreme cyanosis, due to the formation of methemoglobin. Death is due to respiratory failure.

Phosphorus passes to the fetus in sufficient amounts to produce fatty hepatic degeneration. Nitrobenzene has been used frequently to produce abortion, but even large doses are ineffective. Nitrobenzene evidently does not pass the placental barrier. Strychnine would probably cause the death of the fetus because of the violent tetanic convulsions of the uterus.

Because nitrobenzene poisoning is delayed sometimes for hours after ingestion, the interval before the fetus would be affected would probably be considerable. With phosphorus the interval would probably be somewhat prolonged. With strychnine the effects on the fetus would be only a matter of minutes.

INTERMITTENT INFUSIONS

To the Editor:—In some institutions a cannula is inserted into a child's vein for intermittent infusions; that is, a stilette is inserted into the cannula, and when it is time to start the infusion, fluid is forced into the vein under pressure to open the vein. What is the possibility of thrombus and embolus formation with this procedure?

Robert C. Tavlin, M.D., Mooreland, Okla.

Answer.—The procedure described is a common practice in hospital pediatric services. It is often difficult to find a vein in the child that will easily receive an instrument through which fluids may be given. When such a vein is discovered a cannula is inserted and left in place sometimes for days. After a variable period of time, thrombophlebitis occurs in the superficial vein being used and the infusions must be stopped or their site changed because the lumen of the vein becomes obliterated. Embolic phenomena in children have been extremely rare, so that their possibility need not influence the use of this method.

The cannula for intravenous infusion in adults has been found practical in cases requiring continuous infusions over a long period of time. Mason has pointed out that thrombosis and lymphangitis often necessitate changing the site. The newer plastic and nylon catheters are less irritating but still may cause local reaction however small the catheter may be. Intermittent use of the cannula in adults has not been successful except for the intravenous administration of heparin, in which the intraluminal reservoir of heparin tends to keep the catheter open and to prevent clotting. Positive pressure to start the flow is risky in all cases.

PROTEIN-BOUND IODINE

To the Editor:—Is there a simplified method for determining blood protein-bound iodines? Methods which we have been able to find involve special equipment, expense and much time. What is the range of normal values?

August F. Fath, M.D., Kalamazoo, Mich.

Answer.—Perhaps the most satisfactory method for the determination of serum protein-bound iodine is that described by Barker (*J. Biol. Chem.* **173**:715, 1948). This method requires some special equipment, but is not unduly difficult or time consuming.

The extreme range of normal values is given as 3 to 9 micrograms per hundred cubic centimeters of serum (Riggs and others, *J. Clin. Investigation,* **24**:722, 1945), although most euthyroid persons will yield serum containing from 4 to 8 micrograms per hundred cubic centimeters. Man and others (*J. Clin. Investigation,* **21**:773, 1942) found a group of 15 hyperthyroid patients to exhibit values between 9.4 and 33.7 micrograms per hundred cubic centimeters, while Riggs and others (*J. Clin. Investigation,* **24**:722, 1945) found the serum in 26 cases of hypothyroidism to contain 0.2 to 2.5 micrograms per hundred cubic centimeters.

LOSS OF SENSE OF SMELL

To the Editor:—Immediately after an operation for removal of a cancer of the esophagus, opposite the seventh cervical vertebra, a man aged 60 lost the sense of smell and experienced a perversion of the sense of taste. The operation occurred a year ago. The larynx was removed at the same time, so that nasopharyngeal respiration was terminated. There were no operative procedures involving tissues above the neck. The patient was under the anesthetic for five hours. Convalescence was uncomplicated. Examination of the nasal cavities showed a moderate grade of edema and a persistent discharge of clear mucus. The accessory nasal sinuses were normal. The central nervous system was unaffected. The patient, a year after the operation, cannot detect the odor of tobacco smoke, ether, essential oils, carbon tetrachloride and other volatile substances which are allowed to pass through his nasal cavity. What is the cause of the impairment of the olfactory and gustatory senses? What is the prognosis? Would topical therapy be of avail?

M.D., New York.

ANSWER.—Since the sense of smell provides, beyond the recognition of sweet, salt, bitter and sour, most of what is called "taste," it is probably a fair assumption that this patient's perversion of taste is related to his loss of smell.

Loss of smell is unusual after an operation of the kind described. Assuming that the sense of smell was lost at the time of operation, one would suppose the site of the disturbance to be in the olfactory nerves of the nasal mucosa. Two possibilities are suggested. One is that the long exposure to the anesthetic may have injured the nerves. The other is related to removal of the larynx, a procedure which eliminates the nose as an airway and necessitates intubation. The nasal mucosa no longer functions and as a result becomes edematous. This edema usually subsides after a few days. Ordinarily, the olfactory nerve endings are not damaged by it.

There is little likelihood that the condition will improve. Topical therapy would be of no avail.

LUPUS VULGARIS

To the Editor:—A married woman of 25 with two children has suffered from lupus vulgaris for fifteen years; the cheeks alone are involved. Can you suggest appropriate treatment?

M.D., Canada.

ANSWER.—Charpy (*Ann. de dermat et syph.* **6**:310-346 [May-June] 1946) introduced a revolutionary treatment for lupus vulgaris with calciferol (chemically pure vitamin D_2). Synthetic oleovitamin D, 150,000 international units, and 1 quart of milk daily (the latter to insure an adequate supply of calcium) have been used in this country. Such treatment may have to be given for a year or longer. Anorexia, loss of weight and polydypsia may occur. Stop vitamin D_2 if the subjective symptoms indicate it. The blood sedimentation rate is the most reliable indicator of reactions, showing a rise of 60 to 98 mm.

Local treatment is also necessary—cover the areas of lupus vulgaris with Lassar's paste; change it daily, using warm liquid petrolatum to cleanse it. Resistant areas of lupus vulgaris should be excised if at all possible.

HYDRATED SILICIC ACID

To the Editor:—A buffered solution containing the equivalent of 5 mg. of hydrated silicic acid has been advocated as effective in the treatment of various arthritic processes. Are there any published reports confirming this? Is this toxic or injurious if given frequently? Which is the best route of administration? How often should it be given?

M.D., Rhode Island.

ANSWER.—Such a preparation is exploited by a pharmaceutical company but neither substantiation of their claims nor critical evaluation of this substance can be found in the medical literature.

ACNE

To the Editor:—Can testosterone be successfully and safely used for acne in adolescence? What is the customary dosage and method of administration?

Paul A. Ferrier, M.D., Pasadena, Calif.

ANSWER.—The use of testosterone for the treatment of acne is not an established method of treatment. Estrogenic substances are used, but on an experimental basis only—the indications and dosages have not yet been established.

PULMONARY FIBROSIS

To the Editor:—A patient, aged 42, is thin, having slowly lost weight over a period of five years. She has one degree of fever daily. Roentgenograms of the chest show nonspecific fibrosis. Repeated tests for tuberculosis were negative in result. All the findings were negative. The disturbing symptom is an irritating, almost nonproductive cough. Many clinics and means of therapy have been of no avail. Would the inhalation of aluminum dust as is used in the symptomatic treatment of silicosis have anything to offer?

L. L. Sherman, M.D., Picayune, Miss.

ANSWER.—The available evidence does not permit of exact diagnosis in the case described, but one is inclined to suspect that the primary condition is pulmonary emphysema with associated fibrosis. If this is correct, treatment is likely to be most unsatisfactory. The use of iodides to augment bronchial secretion, physical therapy to increase the movements of the thoracic cage and the inhalation of penicillin aerosols to combat intrabronchial infection may be tried in the hope of obtaining some symptomatic improvement. If bronchial spasm complicates the picture, ephedrine or some of the recently discovered sympathomimetic amines may be tried. The inhalation of aluminum dust has a limited field of usefulness in relatively acute silicosis. It acts by "plating" the particles of silicon and rendering them less irritating to the pulmonary tissues. In cases of silicosis with marked fibrosis, little can be accomplished, and in the case of nonspecific fibrosis under consideration there would not appear to be any indication for such treatment.

PRESSURE URTICARIA

To the Editor:—A garage mechanic aged 36 complains of itching of the skin in various parts. For six or seven years he has noticed that any undue pressure on his skin will produce intense itching, e. g., as he bends over the motor of a car that part of his body touching the fender begins, after a few minutes, to itch; the hand holding a wrench itches; if he plays baseball the gloved hand itches from the trauma of the ball. The condition has been described by other physicians as giant urticaria. There is no family history of allergy, and the condition does not seem to be related to his occupation. He has been partially relieved by diphenhydramine hydrochloride ("benadryl"). Please discuss the diagnosis and treatment.

D. E. Schlosser, M.D., Mt. Joy, Pa.

ANSWER.—This patient apparently has urticaria sine urticis. Chronic cases such as this are sometimes caused by sensitization to drugs, to unusual foods or to a focus of infection. A detailed history and clinical tests made by the trial and elimination method might help to identify any causative drug or food. The patient should also be examined carefully for the presence of infection or parasites in his system. Those cases in which symptoms are produced by physical agents, such as in this case, sometimes respond well to treatment with so-called antihistaminic or antiurticarial drugs. Some patients respond better to one than to another of these drugs. Only clinical trial will determine which is the better, and the proper dosage for each case.

BEDBUG BITES

To the Editor:—Can bedbug bites cause bullous erythema?

David L. Cooper, M.D., Erie, Pa.

ANSWER.—The lesions produced by bedbugs occur usually on the ankles and legs in groups of three, or three lesions in a line, which medical students often refer to as "breakfast, lunch and dinner"—to form a striking and unforgetable clinical picture. Ordinarily the lesions consist of either small edematous papules, wheals or purpuric macules, rather than bullae, but bullae may occur in highly sensitive skins which react violently to noxae of any sort.

DUPUYTREN'S CONTRACTURE

To the Editor:—In the July 24 issue of The Journal, page 1177, an inquiry was published regarding the cause of and treatment for Dupuytren's contracture. The reply implicated trauma more explicitly than is justified by the facts. The cause of this condition remains unknown in spite of the many suggestions which have been advanced. Clinical observation points to the fact that it is frequently hereditary and is often associated with such diseases as gout, arthritis and diabetes. It is also sometimes associated with plastic induration of the penis and with a similar condition of the plantar fascia.

Contrary to the belief expressed in the reply, it seems clear that this condition is unrelated to trauma. It occurs less frequently in the hands of laborers than in those whose hands are less subject to injury. All hands are subject to what was described as "multiple minimal trauma." But the fact of the relative infrequency of the Dupuytren contracture points to the unimportance of such trauma.

I believe that the reply given may be misleading if accepted seriously by industrial courts and that many unjustifiable awards might be made.

E. M. Hanrahan, M.D., Baltimore.

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SURGERY OF THE HEART AND ALLIED GREAT VESSELS

Chairman's Address

B. NOLAND CARTER, M.D.
Cincinnati

The purpose of this paper is to present in concise form the status of surgery of the heart and associated great vessels. I do not plan to go into actual details of surgical technic, but rather to give an idea of what can be accomplished by operation in various cardiac conditions. Some of the surgical approaches to problems of heart disease are not new but advances of note have been made in them. A new chapter in surgery is being written in the management of certain congenital diseases of the heart, and is of such importance that it should be forcibly brought to the attention of the profession. Only by surgical means can patients with certain conditions formerly considered hopeless be offered a good chance for cure, and this opportunity should not be denied them. The subjects for discussion will be taken up as outlined.

- I. Heart
  - A. Disease
    - 1. Acute suppurative pericarditis
    - 2. Chronic constrictive pericarditis
    - 3. Coronary sclerosis
  - B. Injuries
    - 1. Nonpenetrating
    - 2. Penetrating
    - 3. Retained foreign bodies
  - C. Tumors
- II. Allied great vessels
  - A. Congenital anomalies
    - 1. Patent ductus arteriosus
    - 2. Coarctation of the aorta
    - 3. Tetralogy of Fallot
    - 4. Aortic ring

ACUTE SUPPURATIVE PERICARDITIS

Prior to the general use of penicillin about 1944 the sole chance of recovery in cases of suppurative pericarditis lay in surgical drainage, and then as now the best prognosis was afforded by early operation—an end rarely achieved since this disease is usually not recognized until late. Behrend and Boles reported that of 146 cases of acute purulent pericarditis coming to autopsy at the Philadelphia General Hospital the disease had been diagnosed in only 4, and 3 had come to operation.[1]

Surgical drainage has been effected by various approaches, the most frequently used being an anterior one in which portions of one or more costal cartilages and a portion of the sternum are resected. Every effort must be made to evacuate the pus which is so prone to collect in the sulcus behind the heart and to prevent its reaccumulation either by the introduction of tubes with gentle irrigation or by the daily exploration of this area with the lubricated gloved finger; whereas the mortality rate in cases of suppurative pericarditis not treated surgically is 100 per cent, roughly 50 per cent of patients treated by surgical drainage have recovered.[2]

What is the role of chemotherapy in the management of suppurative pericarditis? From a prophylactic point of view, a decided decrease in incidence should be effected, since the disease is never primary but always secondary to infections elsewhere, such as empyema, infected wounds, pneumonia and septicemia from various causes, especially osteomyelitis, all of which are so favorably influenced by chemotherapy. The systemic use of chemotherapeutic agents alone in established cases of suppurative pericarditis has been extremely disappointing. A careful analysis of the few reports available dealing with pericardial paracentesis followed by the introduction of penicillin would indicate that this method of treatment is open to serious question, and in my own mind is not to be recommended.[3] The two chief objections to it are (1) the inherent danger of injuring the heart with the needle, a fact particularly to be reckoned with in this disease in which the heart is so commonly "floated" against the anterior pericardium and may even be adherent there, and (2) the impossibility of removing by aspiration performed anteriorly the pus which uniformly collects behind the heart. The proper place for chemotherapy would appear to be as an adjunct to surgical drainage, when it should be employed systemically in large doses and locally in the pericardial sac after the latter has been surgically exposed and when the drug may be placed in all portions of the pericardial cavity under direct

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Read before the Section on Surgery at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

From the Department of Surgery, College of Medicine of the University of Cincinnati, and the Cincinnati General Hospital, Cincinnati.

[1] Behrend, M., and Boles, R. S.: Indications for Operations of Cardiolysis, Pericardiostomy and Pericardiectomy, J. A. M. A. **108**: 1941-1946 (June 5) 1937.

[2] (*a*) Bigger, I. A.: Suppurative Pericarditis, Ann. Surg. **109**: 763-770, 1939. (*b*) Bunch, G. H.: Suppurative Pericarditis, Am. J. Surg. **28**: 613, 1935. (*c*) Gowland, M. M.: Local Penicillin in Purulent Pericarditis, Brit. M. J. **2**: 922, 1947. (*d*) Guiou, N. M.: Pericardiotomy for Septic Pericarditis, Canad. M. A. J. **41**: 163-166, 1939. (*e*) Impink, R. R.; Deuhoff, E., and VanderVeer, J. B.: Staphlococcus Aureus Septicemia, with Osteomyelitis, Pneumonia, and Acute Purulent Pericarditis, Am. Heart J. **26**: 699-708, 1943. (*f*) Ross, D. E.: Suppurative Pericarditis, Am. J. Surg. **43**: 134-137, 1939. (*g*) Shipley, A. M.: Suppurative Pericarditis, Ann. Surg. **103**: 698-705, 1936. (*h*) Shipley, A. M., and Winslow, N.: Purulent Pericarditis, Arch. Surg. **31**: 375-394 (Sept.) 1935. (*i*) VanderVeer, J. B., and Wagner, J. A.: Diagnosis and Treatment of Acute Pericarditis, Clinics **5**: 96-115, 1946. (*j*) Wadsworth, G. L.: Symposium on Surgical Infections: Acute Pericarditis, S. Clin. North America **22**: 432-436, 1942.

[3] Allison, S. T., and Loughlin, E. H.: Acute Pericarditis Successfully Treated with Intrapericardial Penicillin and Systemic Chemotherapy, U. S. Nav. M. Bull. **44**: 383-386, 1945. Smalley, R. E., and Ruddock, J. C.: Acute Pericarditis: Study of Eighteen Cases Among Service Personnel, Ann. Int. Med. **25**: 799-812, 1946. Texon, M.: Purulent Pericardial Effusion, Am. J. Med. **1**: 577-580, 1946. Wadsworth.[2j] Wise, A. W., and Shafer, L. E.: Purulent Pericardial Effusion Treated with Penicillin Given Intrapericardially, J. A. M. A. **127**: 583 (March 10) 1945. Zimmerman, J. J., and Durgin, B.: Staphylococcus Aureus Septicemia and Pericarditis Treated with Penicillin, Am. Heart J. **31**: 93-97, 1946.

vision. Today in the established disease the most effective treatment is early surgical drainage supplemented by intensive systemic and local penicillin therapy.

CHRONIC CONSTRICTIVE PERICARDITIS

Although the medical treatment of chronic constrictive pericarditis is often palliative it is never curative, and with such therapy alone this disease always kills. The surgical attack on the condition is relatively recent. Churchill's patient, operated on July 18, 1928, was the first successfully treated patient in the United States.[4] Since that time the operation has been performed by many surgeons, with decreasing mortality rates and more gratifying results.

As experience with this disease has widened, certain facts have become increasingly evident. Tuberculosis has assumed a more prominent role in the causation.[5] It has been found unwise to operate while the inflammatory condition is active unless it is obvious that death will otherwise ensue. The most reliable signs now recognized are: high venous pressure, low arterial pressure, a quiet fixed heart, paradoxic pulse, an enlarged liver, with ascites followed by edema of the lower extremities, and fluid in the pleural cavity.[6] The diagnosis has many times been confused with cirrhosis of the liver, principally on account of the ascites. From a technical point of view there have been few changes in the operation itself, which consists of the removal of a portion of the thickened adherent pericardium. A recent modification in technic has been effected by utilizing a direct intrapleural approach after resection of the fifth rib and division of two or more costal cartilages. This procedure is easier and less mutilating than the formerly preferred method of an extrapleural approach with resection of the second to sixth costal cartilages together with short segments of the ribs and occasionally a portion of the sternum. Much emphasis is placed by Heuer [7] on adequate preoperative preparation, consisting of bed rest, restoration of protein balance and removal of fluid by diuretics and aspiration, even though this takes many weeks.

Owing to atrophy from disuse and also to myocardial degeneration, in long-standing cases the heart does not recover for many months or may always show impaired function. For this reason, as well as on account of permanent hepatic damage that may result in neglected cases, early diagnosis and prompt operation are essential for full recovery.

In general it may be stated that results of operation in the disease are as follows: 61.5 per cent of the patients are cured or decidedly improved and 9.5 per cent unimproved; the mortality rate, which varies from 29 per cent to 0 per cent, has declined strikingly in the last decade. The most recent comprehensive report is by Heuer, who in 1946 cited 18 personal cases with no deaths and 83 per cent of the patients cured or considerably improved.[7]

CORONARY SCLEROSIS

The vast majority of deaths due to "heart disease" result from diminished blood flow through the coronary arteries. It follows, therefore, that any method of supplementing and increasing coronary circulation would be of great value in the management of this disease. Studies have indicated that in coronary artery sclerosis the larger branches are involved first, often to the exclusion of the smaller ones. This should provide an ideal arrangement for the efficacy of anastomoses between an outside source and the smaller coronary branches which nourish the myocardium.

The essential factors involved in the production of an adequate collateral circulation are to provide an adequate source of blood and to produce an anastomosis between this source and the myocardial vessels. The actual anastomosis has been attempted by the production of vascular granulation tissue between the heart muscle and the intended new blood supply. It has been postulated that newly formed vessels in this tissue would join with existing vessels in the donor and recipient sites and thus provide new channels by which blood could reach the myocardium. Considerable reliance has been placed on the fact that when an organ is in need of blood, it avails itself of any possible source of supply. Experimental and clinical attempts to produce vascular granulation tissue through which a collateral blood supply can reach the myocardium have been by scarification of opposing surfaces and by the use of irritating substances, such as talc, powdered asbestos and acriflavine. Potential sources of new blood supply which have been utilized are the thoracic wall, including the pectoral muscles and the internal mammary and intercostal arteries, the pericardium together with its fat, the omentum and the lung. It has been definitely demonstrated experimentally that new vascular channels can be established between the heart and an outside source, but the direction of blood flow has not been proved, nor the volume of blood which can be supplied, nor the duration of the newly formed channels. Evaluation of any method is notoriously difficult in view of the remarkable improvement which nature alone sometimes effects in coronary disease.

In 1935 Claude Beck published his first paper dealing with the production of collateral blood supply to the heart, and his painstaking and fundamental work since that time has been of outstanding importance. He first sutured flaps of pectoral muscle to the abraded heart surfaces, but in subsequent operations abandoned this procedure in favor of the introduction of powdered asbestos, leaving windows in the anterior pericardium through which vascular connections could be established between the cardiac muscle and the thoracic wall.[8] From 1935 to his last published report in 1943 he had operated on 37 patients, with an operative mortality rate of 37.8 per cent.[8g] Of the survivors 14 were cured or greatly improved, 5 were moderately improved and 4 were unimproved. In May 1948 he reported the results of studies on anastomosing the aorta to the coronary sinus by way of a transplanted vessel, first ligating the coronary sinus.[9] After a considerable number of animal experiments the procedure was carried out on a patient, a portion of the branchial artery being used for the graft.

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[4] Churchill, E. D.: Decortication of the Heart for Adhesive Pericarditis, Arch. Surg. **19:** 1457-1469 (Dec., pt. 2) 1929.

[5] Blalock, A., and Levy, S. E.: Tuberculous Pericarditis, J. Thoracic Surg. **7:** 132-149, 1937. Harrington, S. W.: Chronic Constrictive Pericarditis: Partial Pericardiectomy and Epicardiolysis in Twenty-Four Cases, Ann. Surg. **120:** 468-487, 1944. Blalock, A., and Burwell, C. S.: Chronic Pericardial Disease, Surg., Gynec. & Obst. **73:** 433-461, 1941.

[6] Beck, C. S.: Acute and Chronic Compression of Heart, Am. Heart J. **14:** 515-525, 1937.

[7] Heuer, G. J., and Stewart, H. J.: The Surgical Treatment of Chronic Constrictive Pericarditis, S. Clin. North America **26:** 477-488, 1946.

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In 1938 O'Shaughnessy of England, utilizing omentum brought up through the diaphragm as a source of blood supply, operated on 20 patients, with 6 deaths. Nine of the survivors were asymptomatic. Since his tragic death in the battle of Dunkirk his work has not been continued.[10]

Thompson and Raisbeck in 1942 utilized talc to produce vascular adhesions between the heart and pericardium.[11] Thompson's latest report comprised 38 patients with good results in 70 per cent and a 15.8 per cent mortality rate.[12]

Fauteux has attempted to relieve anginal pain by pericoronary neurectomy combined with ligation of the coronary sinus to increase the amount of blood available to the myocardium. His clinical cases at his last report (1946) numbered 16, with 3 operative deaths.[13] Eleven patients were alive with objective improvement three months to six and a half years after operation. More recently he published studies on anastomosis of the internal mammary artery with the coronary sinus and anastomosis of the right auricle with the pulmonary artery above the pulmonary valves, but no clinical data were given.[14]

Vineberg (1946, 1948) has reported experimental studies on the production of vascular anastomoses through implantation of the internal mammary artery directly into the myocardial wall of the left ventricle. There has been no clinical application of these studies.[15]

Lezius in 1939 utilized the lung experimentally as a source of blood to the heart.[16] O'Shaughnessy used this procedure in 1 patient with decided improvement. I have modified Lezius' operation and, after considerable experimental work in which undoubted numerous new vascular channels were demonstrated, have operated on 2 human beings. One of these patients, operated on one year ago, is decidedly improved, and the other died of a massive infection thirty-six hours after operation.

In attempting to evaluate the results of the clinical efforts at producing a collateral blood supply to the heart, I find it striking that, in spite of apparent improvement in the majority of surviving patients, reporting surgeons have not published further experiences with the operation and that their lead has not been followed by others. The solution of the problems involved is of so great potential therapeutic value that it justifies the continuation of the combined efforts of cardiologists and surgeons. In my opinion careful clinical application of the principles worked out in the laboratory is not only justifiable but is indicated if progress is to be made in this field.

NONPENETRATING WOUNDS OF THE HEART

There is no question that the heart may be damaged by nonpenetrating injuries, such as direct blows over the precordium, compression of the thorax and sudden compression of the abdomen and lower extremities. Beck has emphasized the importance of "steering wheel accidents" in this regard and other authors have reported cardiac damage caused by blows from baseballs and fists and by compression by trailer bars, tail gates of trucks and the like.[17] The damage produced in the heart varies from actual rupture to mild contusion. The signs and symptoms of injury to the heart are frequently unrecognized, since they are masked by the evident injury to the bony thorax. They are precordial pain, tachycardia, arrhythmia, dyspnea and roentgenologic and electrocardiographic changes. The heart is capable of withstanding considerable trauma, and the vast majority of patients sustaining moderately severe cardiac injury recover, provided that the injury is recognized and the medical treatment employed is similar to that in myocardial infarction. There is, however, a group of cases in which surgical intervention is indicated and is life saving. These cases include those (1) in which a small rupture of the heart muscle occurs, accompanied with hemorrhage into the pericardial sac with a resulting acute compression of the heart, (2) in which acute cardiac compression occurs from the accumulation of large amounts of bloody fluid without actual rupture of the myocardium and (3) in which softening and fibrosis of a contused area results in the formation of an aneurysm. If signs and symptoms of acute cardiac compression are evident immediately or within a short time after injury, rupture of the heart should be suspected and immediate operation performed with evacuation of blood and clot and suture of the laceration. If such signs and symptoms develop more gradually over a period of hours or days, it is logical to assume that no actual rupture has occurred but that bloody fluid has accumulated from a contusion. In such circumstances aspiration is preferable, since there is little likelihood of an actively bleeding point. In instances in which aneurysm of the heart is developing, the involved area may be reinforced with a patch of fascia lata or pericardium. A more definitive surgical approach would be excision of the aneurysm, and this may well be feasible in view of Murray's successful resection of acutely infarcted areas in dogs' hearts and of my own experience of successful removal of considerable areas of both normal and infarcted heart muscle in animals.[18]

PENETRATING WOUNDS OF THE HEART

Prior to 1933 the vast majority of cases with penetrating wounds of the heart were either unrecognized or treated conservatively, with a mortality rate of 90 per cent or more. With a better understanding of the problems involved has come a more precise method of surgical management and a mortality rate ranging from 22 to 49 per cent in those clinics in which a considerable number of cases are encountered. At the Cincinnati General Hospital there has been a 21 per cent mortality rate in 29 patients. There is evidence that mortality figures are being lowered even more; Griswold reports only 3 deaths in the last 36 cases from his clinic.[19]

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[9] Beck, C. S.; Stanton, E.; Batiuchok, W., and Leiter, E.: Revascularization of Heart by Graft of Systemic Artery into Coronary Sinus, J. A. M. A. **137:** 436-442 (May 29) 1948.

[10] Davies, D. T.; Mansell, H. E., and O'Shaughnessy, L.: The Surgical Treatment of Angina Pectoris and Allied Conditions, Lancet **1:** 1-10 and 76-82, 1938. O'Shaughnessy, L.: Surgical Treatment of Cardiac Ischaemia, Lancet **1:** 185-194, 1937. O'Shaughnessy, L.; Slome, D., and Watson, F.: Surgical Revascularization of the Heart, Lancet **1:** 617-621, 1939.

[11] Thompson, S. A., and Raisbeck, M. J.: Cardio-Pericardiopexy: The Surgical Treatment of Coronary Artery Disease by the Establishment of Adhesive Pericarditis, Ann. Int. Med. **16:** 495-520, 1942.

[12] Thompson, S. A., in discussion on Stanton, Schildt and Beck[81] at American Surgical Association, May 1948.

[13] Fauteux, M.: Experimental Study of the Surgical Treatment of Coronary Disease, Surg., Gynec. & Obst. **71:** 151-155, 1940. Fauteux, M.: Treatment of Coronary Disease with Angina by Pericoronary Neurectomy Combined with Ligation of the Great Cardiac Vein, Am. Heart J. **31:** 260-269, 1946. Fauteux, M.: Surgical Treatment of Angina Pectoris, Ann. Surg. **124:** 1041-1046, 1946.

[14] Fauteux, M.: Anastomosis of the Right Auricle with the Pulmonary Artery, Rev. canad. de biol. **5:** 252, 1946. Fauteux, M.: Anastomosis of the Internal Mammary Artery with the Coronary Sinus, Rev. canad. de biol. **5:** 252, 1946.

[15] Vineberg, A. M.: [illegible] Anastomosis Between Coronary Vessels and Transplanted [illegible] Canad. M. A. J. **55:** 117-119, 1946. Vin[illegible] of Anastomosis Between Coronary Vessels and Transplanted Internal Mammary Artery, read before the American Association for Thoracic Surgery, June 2, 1948.

[16] Lezius [illegible] funktionellen Grundlagen der künstlichen [illegible] durch die Lunge bei Coronararterienve[illegible] **91:** 101-139, 1938.

[17] Beck, C. S.: Contusions of the Heart, J. A. M. A. **104:** 109-114 (Jan. 12) 1935.

[18] Murray, G.: The Pathophysiology of the Cause of Death from Coronary Thrombosis, Ann. Surg. **126:** 523-534, 1947.

The diagnosis is as a rule easy, provided that the possibility of heart injury is ever kept in mind. Such diagnosis is based primarily on the signs and symptoms of acute compression of the heart resulting from bleeding into the pericardial sac. Beck has emphasized a triad of signs of fundamental importance: elevated venous pressure (normal being 6 to 12 cm. of water), a lowered arterial pressure and a quiet heart. In addition there is shock out of proportion to the apparent injury and fluoroscopic evidence of diminished or absent cardiac pulsation.

As experience with this condition has accumulated there has come a recognition that not all patients sustaining penerating heart wounds need be subjected to operation. The selection of cases for conservative treatment requires delicate judgment combined with critical and continued observation. Several important factors enter into this crucial and hazardous decision. If the causative agent is one apt to produce a small wound in the heart which therefore does not tend to bleed furiously or continuously, aspiration should be curative. Such agents are ice picks, small-bladed knives and long pins. On the other hand, bullets and large-bladed knives are prone to produce large lacerations of the heart which require operation and suture. A slow onset of the signs and symptoms of acute cardiac compression after injury indicates a small heart laceration with little tendency to rapid or continuous bleeding. Patients with bleeding from a heart wound into the pleural cavity can be saved only by operation. Singleton,[20] Strieder,[21] Griswold,[22] Warren and his co-workers [23] and Blalock and Ravitch [24] have reported successful treatment in carefully selected cases by aspiration, but all emphasize the necessity of performing aspiration with the operating room in readiness if aspiration is not successful because of clot, in the presence of clearcut signs of cardiac compression, or if there is evidence of recurrence of compression. Aspiration is of unquestionable benefit as a life-saving measure in patients who might well succumb to pronounced cardiac compression before operation can be performed.

Beck in 1942 [25] and Cooper, Stead and Warren [26] in 1944 have demonstrated the real value of intravenous infusions of isotonic sodium chloride solutions and blood as a preliminary to either conservative or operative treatment where there is cleancut evidence of acute cardiac compression.

RETAINED FOREIGN BODIES

One of the most thrilling and spectacular advances in cardiac surgery resulting from experiences in World War II is that of removal of foreign bodies from the chambers of the heart and from the lumen of the nearby great vessels. Prior to the war there was some difference of opinion as to the advisability of the removal of such foreign bodies, but a majority of observers favored treatment without operation. Factors which have served to reverse this attitude have been the relatively large number of such cases occurring in military surgery and surgical confidence stemming from improved operative technics combined with perfected methods of anesthesia. Harken and his associates have been the leaders in this field, and their phenomenal success is directly responsible for the present attitude that foreign bodies measuring 1 cm. or more in two dimensions should be removed surgically.[27] The proved reasons for such removal are: (1) to prevent embolism, (2) to diminish the danger of bacterial endocarditis and (3) to decrease the incidence of myocardial or vessel wall damage leading to possible rupture with hemorrhage. In addition, the distressing symptoms of precordial pain, dyspnea, asthenia and cardiac neurosis can be relieved by operation.

Harken's results are as follows: 134 patients with foreign bodies in and in relation to the thoracic blood vessels and heart were operated on without a death. In 13 of these patients, foreign bodies were removed from cardiac chambers.[27a]

PRIMARY TUMORS OF THE HEART

Primary tumors of the heart are infrequently encountered, the estimated ration of primary to metastatic lesions being 1 : 16. Woll and Vickery cite Maheim as having collected 320 cases of primary tumors of the heart to 1945, the disease in only 3 of which had been diagnosed ante mortem.[28] These lesions are usually clinically silent. Roentgenologic examination may reveal a fixed right border, or the size and shape of the heart may be abnormal. Unexplained and sometimes inconstant changes in cardiac rhythm and the development of hemorrhagic pericardial effusion are suggestive of a tumor of the heart.

The chambers of the heart are usually extensively involved in primary tumor, over 50 per cent occurring on the left side.[29] Rarely are these lesions so situated as to be amenable to surgical removal even when properly diagnosed. The only recorded case with successful operative removal is that of Beck, who in 1942 reported a patient with an unidentified type of calcified lesion on the left ventricular wall.[30]

PATENT DUCTUS ARTERIOSUS

Although some patients with patent ductus arteriosus live out their life span in comparatively good health, the vast majority succumb to complications of the disease within the first three decades. These complications are cardiac decompensation, as a result of the increased load thrown on the heart; bacterial endarteritis, usually due to Streptococcus viridans infection occurring on the plaques produced in the pulmonary artery by the swirl of the blood and increased arterial pressure in the artery; rupture of the thinned duct or pulmonary artery, and thrombosis with embolism. Shapiro and Keys after careful study concluded that 80 per cent of the patients with patent ductus arteriosus eventually succumbed to their lesion; of these, 40 per cent died of subacute bacterial endarteritis while the remainder, except for a few deaths due to rupture of the ductus or pulmonary artery, died of congestive cardiac failure.[31] In view of these observations they reversed their previous conservative attitude and made a statement representative of the best present day opinion: "Surgery is advisable in the great majority of patients with patent ductus arteriosus with or without subacute bacterial endarteritis. In the latter case surgery affords more than a forlorn hope. The uninfected patient cannot expect a normal life span without surgery and is liable to develop subacute bacterial endarteritis at any time in spite of apparent well being." Signs and symptoms of patent ductus include "machinery" murmur accented during systole, thrill over the pulmonic area, hilar dance and prominent left pulmonary artery.

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[19] Maguire, C. H., and Griswold, R. A.: Further Observations on Penetrating Wounds of the Heart and Pericardium, Am. J. Surg. **74**: 721-731, 1947.

[20] Singleton, A. O.: Wounds of the Heart, Am. J. Surg. **20**: 515-541, 1933.

[21] Strieder, J. W.: Stab Wound of the Heart, J. Thoracic Surg. **8**: 576-577, 1939.

[22] Griswold, R. A., and Maguire, C. H.: Penetrating Wounds of Heart and Pericardium, Surg., Gynec. & Obst. **74**: 406-418, 1942. Maguire and Griswold.[19].

[23] Warren, J. V.; Brannon, E. S.; Stead, E. A. Jr., and Merrill, A. G.: Pericardial Tamponade from Stab Wound of Heart and Pericardial Effusion or Empyema, Am. Heart J. **31**: 418-425, 1946.

[24] Blalock, A., and Ravitch, M. M.: A Consideration of the Nonoperative Treatment of Cardiac Tamponade Resulting from Wounds of the Heart, Surgery **14**: 157-162, 1943.

[25] Beck, C. S.: Further Observations on Stab Wounds of the Heart, Ann. Surg. **115**: 698-704, 1942.

[26] Cooper, P. W., Jr.; Stead, E. A., Jr., and Warren, J. V.: The Beneficial Effect on Intravenous Infusion in Acute Pericardial Tamponade, Ann. Surg. **120**: 822-825, 1944.

[27] Harken, D. E.: The Removal of Foreign Bodies from the Pericardium and Heart, J. Thoracic Surg. **16**: 701-709, 1947. (*b*) Harken, D. E.: Foreign Bodies in, and in Relation to, the Thoracic Blood Vessels and Heart, Surg., Gynec. & Obst. **83**: 117-125, 1946. (*c*) Harken, D. E., and Zoll, P. M.: Foreign Bodies in and in Relation to Thoracic Blood Vessels and Heart, Am. Heart J. **32**: 1-19, 1946.

[28] Woll, E., and Vickery, A. L.: Primary Fibrosarcoma of the Heart with Vertebral Metastases, Arch. Path. **43**: 244-252 (March) 1947.

[29] Yater, W.: Tumors of the Heart and Pericardium, Arch. Int. Med. **48**: 627-666 (Oct.) 1931.

[30] Beck, C. S.: Intrapericardial Teratoma and Tumor of Heart, Both Removed Operatively, Ann. Surg. **116**: 161-174, 1942.

Great credit is due Gross for his performance in August 1938 of the first successful ligation of a patent ductus arteriosus and for his fundamental contributions to this subject.[32] An increasing number of surgeons have performed the operation until it is now widely practiced with excellent results. Touroff has emphasized the curative value of the operation for patent ductus arteriosus complicated by subacute bacterial endarteritis, a condition at one time considered a contraindication to operation.[33] Prior to the advent of penicillin the operation alone proved curative in about one half of such cases. The use of penicillin has greatly widened the field for operation in cases with infection, has materially reduced mortality rates and has increased the chance for cure. It is of particular value in preparing these desperately ill patients for operation as well as in their subsequent treatment.

Gross first advocated simple ligation of the duct. Owing to 20 per cent incidence of recanalization following ligation in continuity, he now divides the duct between clamps and sutures the cut ends. It seems fair to state that ligation is satisfactory in about 80 per cent of the cases, whereas division completely precludes recanalization and is the more surgical procedure.

The following figures indicate what can be expected of the operation: Gross reported ligation of the ductus in 43 patients with 3 deaths and complete division in 90 patients with 2 deaths.[32d] In Jones' series of fifty-three ligations and eight divisions there were 2 deaths.[34]

COARCTATION OF THE AORTA

Coarctation of the aorta has been known for two hundred years and is commoner than is usually recognized. For example, Abbott found 142 cases among 1,000 instances of congenital cardiovascular defects and stated that the average age at death was 36 years.[35] The fibrosed constriction in the aorta is located just beyond the site of origin of the left subclavian artery and produces from slight to complete obstruction. The most important diagnostic sign is hypertension in the upper portion of the body with hypotension in the lower, as evidenced by diminished or absent femoral pulses. It is imperative that this condition be ruled out in all cases of hypertension, especially in children. Additional evidences of the disease are cardiac hypertrophy, absence of the aortic knob, scalloping of the ribs from pressure of the dilated intercostal arteries and palpation of pulsating arteries on the thoracic wall, particularly in the interscapular region when the patient bends forward. The chief dangers of the condition are those of hypertension, others result from aneurysm of the aorta, with or without dissection and rupture, and S. viridans endarteritis.

In October 1944 Crafoord of Stockholm performed the first successful operation for relief of this condition.[36] He resected the coarcted portion of the aorta between clamps and performed end to end suture. In this country Gross performed this operation on 2 patients in 1945, and in May 1948 he reported a total of 41 patients with 6 deaths and good results in 32.[37] Blalock operated on 21 patients with 3 deaths, in 16 of whom end to end suture was accomplished and in 4 a subclavian-aortic anastomosis was done.[37e] Stephens of California reported 6 cases in 1948, with the 3 survivors well.[38] Jones reported 13 cases, in 9 of which end to end suture was utilized, and 4 with subclavian-aortic anastomosis. There were 2 deaths in his series.[39]

TETRALOGY OF FALLOT

The tetralogy of Fallot is present in the majority of cases of congenital cardiovascular defects which are accompanied with cyanosis. Prior to the brilliant contribution of Blalock and Taussig in 1943, patients suffering from this condition were faced with a hopeless outlook, only a few surviving beyond the first decade.[40] The components of the tetralogy are pulmonic stenosis, interventricular septal defects, dextroposition of the aorta and hypertrophy of the right ventricle. The chief disabling factor is pulmonic stenosis or atresia which prevents an adequate flow of blood to the lungs with resulting deficiency in oxygenation. It is in large part this factor which the Blalock operation attempts to overcome by anastomosis of one of the systemic arteries arising from the aortic arch to the right or left pulmonary artery.

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[31] Shapiro, M. J., and Keys, A.: Prognosis of Untreated Patent Ductus Arteriosus and Results of Surgical Intervention, Am. J. M. Sc. **206**: 174-183, 1943.

[32] (*a*) Gross, R. E., and Hubbard, J. P.: Surgical Ligation of a Patent Ductus Arteriosus, J. A. M. A. **112**: 729-731 (Feb. 25) 1939. (*b*) Gross, R. E.: Surgical Therapy in Ten Cases of Patent Ductus Arteriosus, J. A. M. A. **115**: 1257-1262 (Oct. 12) 1940. (*c*) Gross, R. E.: Complete Surgical Division of Patent Ductus Arteriosus, Surg., Gynec. & Obst. **78**: 36-43, 1944. (*d*) Gross, R. E.: Complete Division for the Patent Ductus Arteriosus, J. Thoracic Surg. **16**: 314-327, 1947.

[33] Touroff, A. S. W.: A Modified Technic of Surgical Ligation of Patent Ductus Arteriosus, Surgery **12**: 24-30, 1942. Touroff, A. S. W.: Further Experiences in the Treatment of Subacute Streptococcus Viridans Endarteritis Superimposed on Patent Ductus Arteriosus, J. Thoracic Surg. **12**: 1-17, 1942.

[34] Jones, J. G.: Complications of the Surgery of Patent Ductus Arteriosus, J. Thoracic Surg. **16**: 305-313, 1947.

[35] Abbott, M. E., cited by Crafoord.[36]

[36] Crafoord, C., and Nylin, G.: Congenital Coarctation and Its Surgical Treatment, J. Thoracic Surg. **14** 347-361, 1945.

[37] (*a*) Gross, R. E.: Surgical Correction for Coarctation of the Aorta, Surgery **18**: 673-678, 1945. (*b*) Gross, R. E.: Technical Considerations in Surgical Therapy for Coarctation, Surgery **20**: 1-8, 1946. (*c*) Gross, R. E., in discussion on [illegible] E., and Hufnagel, C. A.: Coarctation of the Aort[illegible] **233**: 287-293, 1945. (*e*) Blalock, A., and others: [illegible] and the Physiopathology of Coarctation of the Aorta, read before the American Surgical Association, May 29, 1948.

[38] Stephens, H. B., in discussion on Blalock.[37e]

[39] Jones, J. C., in discussion on Blalock.[37e]

[40] (*a*) Blalock, A.: Surgical Treatment of Congenital Pulmonic Stenosis, Ann. Surg. **124**: 879-887, 1946. (*b*) Blalock, A.: The Use of Shunt or Bypass Operations in the Treatment of Certain Circulatory Disorders Including Portal Hypertension and Pulmonic Stenosis, Ann. Surg. **125**: 129-141, 1947. (*c*) Blalock, A.: Surgical Treatment of Pulmonary Stenosis, Lancet **2**: 478-479, 1947. (*d*) Blalock, A., and Taussig, H.: Surgical Treatment of Malformations in Which There Is Pulmonary Stenosis or Pulmonary Atresia, J. A. M. A. **128**: 189-202 (May 19) 1945.

The important diagnostic features in this condition are cyanosis, roentgenologic evidence of decreased size of the pulmonary artery and absent or diminished pulsations together with absence of congestion in the lung fields. The most suitable age for operation is from 2 to 10 years; it is not advised in infants 18 months or younger.

Although each of the vessels arising from the aortic arch have been utilized for anastomosis Blalock prefers the innominate subclavian, because of the better angle it makes when swung down to the pulmonary. The end of the systemic artery is best anastomosed to the side of the pulmonary artery, since in this way the new blood flow can reach both lungs, a condition which would not obtain in an end to end suture.

In Blalock's last published report 243 patients had been operated on, with a 21 per cent mortality rate and only a 15 per cent mortality rate in the last 100 patients.[40b] In a paper read before the Royal Society of Surgeons in London in September 1947, he cited 474 cases with an over-all mortality rate of 18 per cent.[40c] Stephens reported twenty-two anastomoses, with a 4.5 per cent mortality rate.[41] Dodrill reported 12 cases, with 3 deaths and 5 cases with excellent results.[42] Murray in Canada has operated on 94 patients.[43] In my clinic only 5 patients have been operated on.

In general the results in the patients surviving operation have been phenomenal, and it has been remarkable how well the pathetic, weak and cyanosed children have tolerated the operation. There has been little or no difficulty with the arm after sacrifice of the subclavian artery. It may be said that the operation represents an outstanding contribution to surgery, has proved thus far to be effective and has given hope to hundreds of patients formerly doomed to death or early invalidism.

About a year and a half after Blalock and Taussig's first publication Potts, Smith and Gibson reported an ingenious operation for this condition, consisting of a side to side anastomosis between the aorta and the right or left pulmonary artery.[44] This anastomosis was made possible by a specially devised clamp, which pinches off and occludes a portion of the aorta for suture but leaves a channel through which blood can continue to flow. The advantages of this operation are that the size of the artificially created communication can be varied to suit the needs of the patient and that it is well suited for use in patients in whom, because of the anatomy of the vessels, there is difficulty in making the systemic artery reach the pulmonary. No reports of the operation other than those by its originators have appeared. In a second paper they reported forty-five completed operations with 4 deaths (8.8 per cent) and seven explorations with 3 deaths.

AORTIC RING

The majority of anomalies of the aortic arch, exclusive of patent ductus arteriosus, give rise to few symptoms and have received little attention from a surgical point of view. Recently several of these abnormalities have been recognized as factors capable of producing troublesome and sometimes fatal compression of the trachea or esophagus. In 1945 Gross emphasized the importance of such anomalies and was the first to treat them successfully by surgical means.[46] The conditions to which he has directed particular attention are: (1) right aortic arch in which the aorta passes behind the esophagus, with variable arrangements of the vessels arising from the arch which, often in conjunction with a patent ductus arteriosus or a ligamentum arteriosum, cause compression of the encircled trachea or esophagus, and (2) double aortic arch in which the ascending aorta splits in two limbs encompassing the trachea and esophagus and joining beyond to form the descending aorta. The posterior limb passes behind the esophagus and the anterior one in front of the trachea.

Whether symptoms develop as a result of such anomalies depends on the size of the space between the encircling vessels in relation to the size of the encircled trachea or esophagus. The symptoms appear soon after birth, are referable to the compressed viscera and consist of dysphagia, wheezing respiration, stridor, retraction of the chest and cough, all of which are increased during the act of swallowing. Frequent bouts of bronchitis or pneumonia result from aspiration into the bronchial tree of material spilled over during attempts to swallow. The diagnosis is readily made by roentgenologic means, whereby indentations can be seen in the esophagus after ingestion of barium sulfate, and narrowing of the trachea is visualized after instillation of iodized oil.

The operation consists in relieving the constricting ring by dividing it at appropriate points. This may entail (1) division of the anterior limb of a double aorta at a safe site; (2) division of a patent ductus or ligamentum arteriosum or (3) a combination of the two procedures. Gross obtained cures in 2 patients using these methods. These are the first and only surgically treated patients that have been reported. With the recent emphasis placed on it, this condition should be more frequently recognized and more adequately treated.

CONCLUSION

In conclusion I should like to emphasize the following points:

1. Surgery of the heart and associated great vessels has made remarkable strides in the past few years.

2. The rapidly growing interest in this type of surgery is sure to result in further advances. The recent attempts at surgical attack on certain types of valvular disease by Smithy[47] and by Gibbon[48] and the efforts at closure of interauricular septal defects reported by Gordon Murray[49] are evidence of this statement.

3. It behooves the medical profession in their efforts to reduce the present ravages of heart disease to be aware of what can be accomplished by surgical treatment.

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[41] Stephens, H. B.: The Blalock Operation for Congenital Pulmonary Stenosis, California Med. **67**: 160-165, 1947.

[42] Dodrill, F. D.: Experiences with the Blalock Operation for the Tetralogy of Fallot, Arch. Surg. **55**: 539-544 (Nov.) 1947.

[43] Murray, G.: Personal communication to the author.

[44] Potts, W. J.; Smith, S., and Gibson, S: Anastomosis of Aorta to Pulmonary Artery: Certain Types in Congenital Heart Disease, J. A. M. A. **132**: 627-631 (Nov. 16) 1946. Potts, W. J.: Anastomosis of Aorta to a Pulmonary Artery for Relief of Congenital Pulmonary Stenosis, J. Internat. Coll. Surgeons **10**: 569-573, 1947.

[45] Potts, W. J., and Gibson, S.: Aortic Pulmonary Anastomosis in Congenital Pulmonary Stenosis, J. A. M. A. **137**: 343-347 (May 22) 1948.

[46] Gross, R. E.: Surgical Relief of Tracheal Obstruction from a Vascular Ring, New England J. Med. **233**: 586-590, 1945. Gross, R. E., and Ware, P. F.: The Surgical Significance of Aortic Arch Anomalies, Surg., Gynec. & Obst. **83**: 435-448, 1946.

[47] Smithy, H. G., and Parker, E. F.: Experimental Aortic Valvulotomy, Surg., Gynec. & Obst. **84**: 625-628, 1947. Smithy, H. G.: Pratt-Thomas, H. R., and Deyerle, H. P.: Aortic Valvulotomy, Surg., Gynec. & Obst. **86**: 513-523, 1948.

[48] Gibbon, J. H., and Glenn, W. L.: Treatment of Syphilitic Aneurysm of the Thoracic Aorta by Cannulation with Polyethylene Tubing, read before the Society of Clinical Surgery, April 16, 1948.

[49] Murray, G.: Repair of Congenital Defects of Cardiac Septa, read before the American Surgical Association, May 29, 1948.

AUREOMYCIN THERAPY OF ROCKY MOUNTAIN SPOTTED FEVER

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Aureomycin is an antibiotic derived from a strain of Streptomyces aureofaciens).[1] It has been found to protect mice and guinea pigs infected with the rickettsia of Q fever, Rocky Mountain spotted fever, murine typhus and rickettsial pox.[2] The drug is readily absorbed after oral administration. Although quantitative assay in the body fluids has not been satisfactory, low levels (0.3 to 2.5 micrograms per millimeter) have been detected in the blood serum and levels up to 320 micrograms per milliliter [3] in the urine. Pharmacologic studies in animals have shown that the toxicity of the drug is low except after intravenous administration where hemoglobinuria and anemia have been noted.[4] In human beings, therapeutic doses up to 60.0 milligrams per kilogram of body weight per day given orally have not been associated with any toxic manifestations except for occasional nausea and vomiting.[5] The latter has been transient and does not contraindicate or prevent continuation of therapy. In the present series the antibiotic was found to be free of any untoward reactions.

In view of the experimental evidence that aureomycin possessed antirickettsial activity, and the absence of toxicity of the drug when given orally, it was decided to treat patients suffering from Rocky Mountain spotted fever, Eastern type, with this antibiotic. Thirteen patients with Rocky Mountain spotted fever, diagnosed clinically and confirmed serologically, have been treated since June 1948.

The response of these patients has been impressive, and it is apparent that aureomycin is an effective therapeutic agent. Seven patients were treated at the Children's Hospital, Washington, D. C. One patient was treated at each of the following hospitals: Georgetown Hospital, Washington, D. C.; Providence Hospital, Washington, D. C.; Arlington General Hospital, Arlington, Va.; Prince George General Hospital, Cheverly, Md.; Sydenham Hospital, Baltimore, and Union Memorial Hospital, Baltimore. Several patients whose disease was diagnosed clinically but as yet unconfirmed serologically are not included in this series. The course of these patients, after treatment with aureomycin, paralleled that noted in the cases presented.

The significant observations in this series of patients are tabulated in table 1 and summarized in table 2. In the latter, data obtained from observation of untreated patients and those treated with para-aminobenzoic acid are included for comparison.

The two case histories presented serve to illustrate the general course of the disease as observed in this series of patients treated with aureomycin.

REPORT OF CASES

CASE 1.—J. K., an 8 year old white boy, was admitted to Children's Hospital on June 25, 1948, with the complaint of fever of two days' duration and a rash of one day's duration. Ten days prior to entry, an embedded tick was removed from the boy's scalp. The child was well until two days before admission, at which time a temperature elevation to 103 F. was observed. On the following day, the temperature fluctuated between 103 and 104 F., and during the afternoon a rash appeared on the arms, legs and chest. Past history and family history were noncontributory.

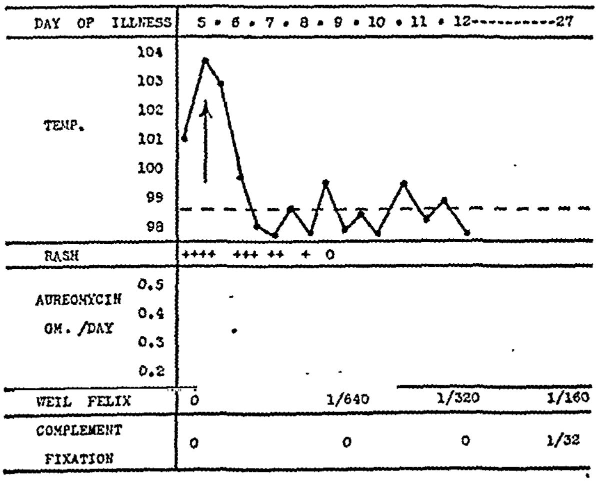

Chart of treatment with aureomycin and observations in a case of Rocky Mountain spotted fever (case 9, W. K., age 3, weight 30 pounds [13.6 Kg.]).

The child was obese and moderately apprehensive, but not critically ill. His temperature was 104 F. A red maculopapular rash which blanched on pressure was observed on his entire body, including the palms and soles. Otherwise the results of his physical examination were negative.

The laboratory examinations showed a hemoglobin level of 13 Gm., 3,900,000 red cells and a white cell count of 6,900, with 63 per cent neutrophils, 34 per cent lymphocytes and 3 per cent monocytes. The results of urinalysis were negative. Subsequent daily blood cell counts and urinalyses during therapy showed no essential variation from the normal. Results of other tests of the chemical content of the blood were normal. Results of cephalin flocculation tests, both on entry and three days later, were negative. On admission, results of a Weil-Felix agglutination test with Proteus OX_{19} and a complement fixation test for Rocky Mountain spotted fever were negative. Seven days later, the Weil-Felix reaction was positive in a titer of 1:160 and the reaction to the complement fixation test performed at the National Institute of Health was positive in a titer of 1:64.

Aureomycin therapy was started within two hours after admission. Initially the patient received 50 mg. every hour

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Aureomycin ... Division, supplied by the Lederle Laboratories ... pany.

From ... of Children's Hospital, Washington, D. C., and the Department of Preventive Medicine, the Johns Hopkins University School of Medicine.

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[2] Wong, S. C., and Cox, H. R.: Action of Aureomycin Against Experimental Rickettsial and Viral Infections, in Conference on Aureomycin—A New Antibiotic, New York Academy of Science, Section on Biology, July 21, 1948.

[3] (a) Dornbush, A. C.: The Determination of Aureomycin in Serum and Other Body Fluids, in Conference on Aureomycin—A New Antibiotic, New York Academy of Science, Section on Biology, July 21, 1948. (b) Schoenbach, E. B.; Bryer, M. S., and Long, P. H.: Pharmacological and Clinical Studies with Aureomycin, in Conference on Aureomycin—A New Antibiotic, ibid. 1948.

[4] (a) Cunningham, R. W.: Pharmacology of Aureomycin, in Conference on Aureomycin—A New Antibiotic, New York Academy of Science, Section of Biology, July 21, 1948. (b) Bryer, M. S., and Schoenbach, E. B.: Treatment of Experimental Infections with Aureomycin, in Conference on Aureomycin—A New Antibiotic, ibid. 1948.

[5] Schoenbach, Bryer and Long.[3b] Finland, M.; Collins, H. S., and Paine, T. F.: Use of Aureomycin in Human Infections, in Conference on Aureomycin—A New Antibiotic, New York Academy of Science, Section on Biology, July 21, 1948.

for three doses and then 100 mg. every four hours. The drug was well tolerated, and no nausea or vomiting was encountered. Within three days after initiation of therapy with aureomycin, the temperature had returned to normal and remained so during the rest of the boy's hospital stay. The rash became petechial and then gradually faded. It had disappeared entirely by the seventh day of his disease and the fourth day of treatment. Aureomycin therapy was discontinued on July 1, after an uneventful convalescence.

Case 9 (table 1).—W. B., a 3 year old white boy, was admitted to the Union Memorial Hospital, Baltimore, on July 19, 1948, on the service of Dr. T. E. Daniels and Dr. Young, with the complaint of fever for five days and a rash of four days' duration. Nine days prior to entry, an embedded tick was removed from the boy's scalp. The child was well until five days before admission, at which time fever was observed. On the following day, the fever continued and a rash appeared on the arms and legs. It spread rapidly to involve the face and trunk. Past history and family history were noncontributory.

The child was well developed and well nourished. He appeared acutely ill and slightly lethargic. His temperature was 103 F. An erythematous maculopapular petechial rash was present on his head, trunk and extremities, including his palms and soles. There was moderate generalized adenopathy. His spleen tip was palpable 2 fingerbreadths below the left costal margin. Slight nuchal rigidity, with positive Kernig and Brudzinski signs, was present. Otherwise the results of the physical examination were negative.

The laboratory examination of the blood showed a hemoglobin of 11.0 Gm.; the white cell count was 12,250, with 73 per cent neutrophils, 24 per cent lymphocytes and 3 per cent monocytes. Repeated urinalyses were normal. The nonprotein nitrogen in the blood was 24 mg. per hundred cubic centimeters, and the total protein was 6.4 Gm. per hundred cubic centimeters. The reaction to the cephalin flocculation test was negative. On admission, a Weil-Felix agglutination test with Proteus OX_2 and OX_{19} and a complement fixation test for Rocky Mountain spotted fever performed by Dr. Herald Cox showed negative reactions. Four days later, the result of the Weil-Felix (OX_{19}) test was positive in a dilution of 1:640. The reaction to the complement fixation test was still negative. Three weeks later, the agglutination for Proteus OX_{19} was positive in a dilution of 1:160, and the complement fixation titer was 1:32.

Aureomycin was administered on the day of admission. The patient was given 50 mg. every hour for three doses. Thereafter 50 mg. of the antibiotic was given every three hours. The drug was well tolerated, and no nausea or vomiting occurred. Within two days after intiation of treatment, the temperature had returned to normal and the patient was alert and eating well. The rash disappeared by the fourth day of treatment. Aureomycin therapy was discontinued after five days, and the patient was discharged from the hospital as cured on the seventh day after treatment was begun. When seen three weeks later, the patient was well. The clinical course of this patient is illustrated in the chart.

Table 1.—*Summary of 13 Patients with Rocky Mountain Spotted Fever Treated with Aureomycin*

Case No.	Patient	Age, Yr.	Weight Kg.	Day of Disease Aureomycin Begun	Days of Fever After Aureomycin Started	Aureomycin Dose, Mg./Interval, Hr., Period or Doses	Aureomycin per Dose, Mg./Kg.	Duration After Aureomycin Was Begun, Days	Total Aureomycin, Gm.	Results of Tests		Severity †	Outcome
										Weil-Felix	Complement Fixation*		
1	J. K.	8	56	2	3	50/1/3 doses 100/4/5 days	2	5½	3.3	1:160	1:64	2+	Recovered
2	M. N.	1⅓	9	8	1½	100/1/3 doses 100/2/7 days	11	7	8.2	1:320	Negative	4+	Recovered
3	B. A. H.	5	17	2	3	200/2/4 days 100/4/2 days	12	6	9.7	1:2560	1:32	2+	Recovered
4	M. M.	10	40	3	2	200/1/3 doses 200/2/4½ days 200/4/2½ days	5	7	12.4	1:640	1:32	2+	Recovered
5	G. P.	10	30	8	3	200/1/3 doses 200/2/6 days 100/4/3 days	7	9	16.3	1:2560	1:64	3+	Recovered
6	J. M.	13	59	4	2	300/1/3 doses 200/2/3½ days 200/4/1½ days	3	5½	11.3	1:1280	1:64	2+	Recovered
7	J. R.	7	25	6	2	100/1/3 doses 100/2/5 days	4	5	5.4	1:320	Not done	3+	Recovered
8	F. S.	14	45	5	2	100/1/2 doses 100/4/1 day 100/2/5 days	2	6	6.2	1:1280	1:16	3+	Recovered
9	W. B.	3	14	5	2	50/1/3 doses 50/3/5 days	4	5	2.3	1:640	1:32	3+	Recovered
10	M. O.	4	19	3	2½	100/1/3 doses 100/2/4 days	5	4½	5.2	1:320	1:32	3+	Recovered
11	G. B.	50	70	4	2	200/1/3 doses 200/2/3 days 200/4/3 days	3	7	10.0	1:640	1:64	3+	Recovered
12	P. J.	15	64	2	2	200/1/3 doses 200/3/3 days	3	3½	5.4	.....	1:32	2+	Recovered
13	D. P.	6	24	4	2	200/1/4 doses 200/4/3½ days 200/6/2 days	8	6	6.0	1:160	....	2+	Recovered

* Rocky Mountain spotted fever antigen.

† 2+ *equals moderately toxic fever, temperature of* 104 F. *or above, with generalized rash;* 3+ *equals severely toxic fever, with petechial eruption,* and 4+ equals coma, convulsions or edema.

COMMENT

It was considered advisable to give three initial "loading" doses of 2 to 5 mg. of aureomycin per kilogram of body weight at hourly intervals and then the same dose every two hours thereafter as maintenance therapy. The dosage schedule was usually changed to four hour intervals after the temperature had been normal for approximately forty-eight hours. In this series aureomycin was administered for a mean period of six days; the shortest period of therapy was four and one-half days, while the longest was nine days. No exacerbations of fever were noted in any case after cessation of treatment with the drug. There seemed to be no definite correlation between the total amount of the drug given and the duration of fever after initiation of therapy. Thus in cases 1 and 8 (table 1) 2 mg. of aureomycin per kilogram of body weight per dose was administered, and the temperature became normal within approximately the same period of time (i. e., two days) as in cases 2 and 3 in which 11 and 12 mg. per kilogram of body weight per dose were given. The total amount of aureomycin administered in our series ranged from 2.3 to 16.3 Gm., with an average of 9.5 Gm. per patient.

The optimal dose of aureomycin in spotted fever has not been determined in this study, and further investigation will be required to define the dosage range within which salutary results may be expected. However, it would appear that an excellent clinical response may be expected when daily doses of 30 to 60 mg. of aureomycin per kilogram of body weight are given orally in this disease. The intramuscular or intravenous routes of administration of aureomycin were not used in these patients.

Definite toxic manifestations were not noted. Some nausea and vomiting was encountered in 4 cases during the first two days of treatment. In 2 of the patients, the simultaneous administration of aluminum hydroxide tablets seemed to mitigate these symptoms. It was difficult to dissociate the nausea and vomiting often encountered in spotted fever from that which might have been attributed to aureomycin. The older children in the group were able to swallow the capsules of aureomycin (50 or 100 mg. per capsule) without too much attendant difficulty. In the younger children it was given as a solution in tap water or incorporated in a syrup. No vomiting of the drug was encountered after the second day of treatment.

TABLE 2.—*Summary of Results in Patients with Spotted Fever Who Received No Specific Therapy and Those Who Received Para-Aminobenzoic Acid or Aureomycin*

		Specific Therapy	
	Non-specific Therapy, 1932-1945	1946-1947, Para-Amino-benzoic Acid	1948, Aureo-mycin
Number of cases	30	17	13
Average number of days after onset when treatment was begun	..	6.5	4.5
Average number of days of fever after treatment was begun	..	6.3	2.3
Average number of days of fever	18	12.8	6.8
Average number of days of rash	12	6*	4*
Average number of days in hospital	20	12	8
Incidence of complications (including pneumonia, myocarditis and parotitis), percentage	26.6	17.6	0
Deaths, percentage	10	0	0

* It is to be noted that the duration of the rash in both the patients treated with para-aminobenzoic acid and those treated with aureomycin represents the post-treatment interval.

The rash usually disappeared within three to five days after the initiation of drug therapy in the patients who were treated early (i. e., within two to four days after onset of the disease), and in these patients the rash did not become petechial. However, in cases 2 and 5, in which the drug was started on the eighth day of the disease, the rash was slow to fade and the petechial manifestations of the rash were still present after one week.

The rapid defervescence observed in all patients treated with aureomycin was matched by the striking clinical improvement. The majority of patients on admission to the hospital were toxic, irritable, anorexic and lethargic. However, within twenty-four to forty-eight hours after starting aureomycin therapy, the children were much more active and alert and showed a return of appetite and interest in their surroundings.

Adjuvant therapy, such as isotonic sodium chloride solutions, plasma and blood, which had been found to be important in the management of spotted fever in past years, was used in only 2 cases (cases 2 and 5); in both instances the disease was in its eighth day before treatment with the drug was started, and both children were in need of supportive therapy. In the other 11 cases, however, the response to aureomycin was so rapid and the course of the disease so promptly altered that no supportive treatment was required, since the children took adequate food and drink within twenty-four to forty-eight hours after the antibiotic therapy was started.

COMPARISON WITH PREVIOUS METHODS OF MANAGEMENT OF SPOTTED FEVER

In view of the endemic concentration of Dermacentor variabilis in the Maryland and Virginia areas, we have had a good opportunity to study spotted fever since its identification in the East in 1931 by Badger, Dyer and Rumreich.[6] In the seventeen years up to and including 1947, there have been 47 patients admitted to Children's Hospital. These patients have been described in previous reports.[7]

From 1932 to 1945, prior to the advent of para-aminobenzoic acid (PABA), 30 cases were observed. The patients were treated only with supportive and symptomatic therapy. Complications were frequent, and the mortality rate in this group was 10 per cent. The average duration of fever in these cases was eighteen days, while the rash persisted for twelve days, usually becoming petechial after the first week. The average hospital stay was twenty days, while the incidence of complications (including pneumonia, myocarditis and parotitis) was 26.6 per cent.

During the summers of 1946 and 1947, there were 17 patients with spotted fever, all of whom were treated with para-aminobenzoic acid. There were no deaths in this group. The average duration of temperature following treatment with para-aminobenzoic acid was six days, and the rash generally persisted for an equal period of time (i. e., six days). The usual duration of hospital stay was twelve days, while complications were observed in 17.6 per cent of the patients. This represented a distinct improvement over that previously encountered in the group who received no specific therapy.

In the present series of patients treated with aureomycin during the summer of 1948 there were 13 patients. Aureomycin was found to be superior to para-aminobenzoic acid for several reasons. First, the temperature response was much more dramatic. In all 13 cases a rapid defervescence to normal by crisis was noted; the average duration of fever after initiation of treatment with the drug was two and one-third days. It was significant that even in the 2 patients with spotted fever who were not treated with aureomycin until the eighth day of their illness (cases 2 and 5) there was an equally dramatic drop in temperature within thirty-six and seventy-two hours, respectively, and a concomitant improvement clinically. This is to be contrasted with previous experience with para-aminobenzoic acid, where, in 7 patients treated after the seventh day of illness, the average duration of fever following institution of therapy was ten days. Of the 3 patients who were severely ill and in whom complicating pneumonitis developed in the series in which para-aminobenzoic acid was used, 2 were started on para-aminobenzoic acid therapy on the eighth day, while the third received the first dose on the sixteenth day. There appears to be little doubt, both from the reports of others[8] and from our own observations,[7c] that favorable therapeutic results were not obtained with para-aminobenzoic acid unless treatment was started before the seventh day of the disease. In the treatment of advanced disease, it would appear, from these preliminary studies, that aureomycin is preferable to para-aminobenzoic acid because of the rapidity of the therapeutic response to this antibiotic. The duration of the rash in the group treated with aureomycin was shorter than in the series treated with para-aminobenzoic acid, averaging four days. Therapy with aureomycin cured the patients and permitted them to be discharged from the hospital more expeditiously, the average stay in the hospital being eight days. Some of the patients were retained in the hospital for a longer period of time than was considered necessary from the point of view of treatment in order to obtain serologic confirmation of the diagnosis. There were no complications in the patients treated with aureomycin.

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[6] Badger, L. F.; Dyer, R. E., and Rumreich, A.: Pub. Health Rep. **46:** 463, 1931.

[7] (*a*) Ong, H. A., and Raffetto, J. F.: Rocky Mountain Spotted Fever: An Analysis of Eighteen Cases in Children, J. Pediat. **17:** 647, 1940. (*b*) Tichenor, C. J.; Ross, S., and McLendon, P. A.: Rocky Mountain Spotted Fever: A Preliminary Report on the Use of Para-Amino Benzoic Acid, J. Pediat. **31:** 1, 1947. (*c*) Ross, S.; McLendon, P. A., and Davis, H. J.: Para-Amino Benzoic Acid in the Treatment of Rocky Mountain Spotted Fever: A Report of Its Use in Seventeen Cases, J. Pediat., to be published.

A comparison between the toxicity of para-aminobenzoic acid and aureomycin should be of interest because any drug destined for widespread usefulness must not be too toxic. In previous reports on the use of para-aminobenzoic acid in spotted fever[7b,c] it was noted that this drug would produce leukopenia in a certain number of cases, and when this occurred the drug had to be discontinued. In addition, many of the patients receiving para-aminobenzoic acid showed a 3 plus and 4 plus cephalin flocculation reaction and a significant drop in the prothrombin level. These observations indicate that there is the possibility that para-aminobenzoic acid exerts an untoward effect on hepatic function. Damage of the liver and kidneys has been observed in postmortem examination of several children treated with para-aminobenzoic acid in diseases other than spotted fever.[9] In addition to daily white cell counts and frequent tests of hepatic function, it was necessary, in following a patient treated with para-aminobenzoic acid, to perform daily tests of para-aminobenzoic acid levels, as well as levels of blood nonprotein nitrogen and carbon dioxide at frequent intervals.

Aureomycin to date appears to be relatively nontoxic when administered orally. No evidence of toxic manifestations other than slight nausea and vomiting was encountered either in the patients with spotted fever or in a control group of normal children. In this latter group, which will be reported more fully elsewhere, a series of laboratory studies (including blood studies, urinalyses, blood nonprotein nitrogen determinations, carbon dioxide–combining power, cephalin flocculation, prothrombin levels, total proteins, Van den Bergh, blood sugar, platelet and reticulocyte counts, bleeding and clotting times and fragility tests) were performed at regular intervals while the subjects were receiving aureomycin in therapeutic doses. No significant changes were encountered in any of these children during the seven days that the drug was given. It is possible, however, that toxic manifestations might yet be noted after a much larger series of patients treated with this drug has been observed. Although no allergic reactions have been encountered so far in our experience, this does not rule out the possibility that such reactions may occur.

CONCLUSIONS

Aureomycin, a new antibiotic, was used in the treatment in 13 cases of Rocky Mountain spotted fever during the summer of 1948. The temperature subsided rapidly, within an average period of two and one-third days, and striking clinical improvement was observed in all of the patients. No toxic effects from the drug were noted. Comparison with para-aminobenzoic acid would indicate that aureomycin is a more effective agent in the treatment of spotted fever.

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THE USE AND ABUSE OF ESTROGEN

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Our knowledge of the physiology of the ovary has passed beyond the original concept of a simple endocrine gland which might possibly produce symptoms by means of quantitative variations of its secretions. The advances of the last two decades have made available clinically useful preparations of the two hormones of the ovary, estrogen and progestogen. This paper deals with estrogen—the hormone of growth and preparation—the more widely employed of the two.

When estrogen first became available for clinical use, there was an understandable overenthusiasm for its application. The rational indications, however, of estrogen usage have contracted measurably following earlier empiric trials. Nevertheless, there is still much confusion concerning estrogenic dosage and the avoidance of undesirable side actions. If one depends on the beautifully embossed brochures which exhort the practitioner with every mail, one falls, unhappily, into the security of the illusion that there are neither contraindications nor side effects in the use of estrogen. Such pamphlets, while providing succinct clinical reviews and emphasizing the multiple commercial forms of estrogen, are often full of omissions.

PREREQUISITES OF ESTROGEN THERAPY

It seems expedient to reemphasize four basic maxims, the observance of which is prerequisite to the administration of estrogen.

1. *Preliminary Physical Examination.*—Prior to prescribing estrogen, a complete survey of the patient must be made to exclude the presence of any organic gynecologic or constitutional disorder which would preclude its use. The ordinary diagnostic procedures, including complete physical examination, blood count, urinalysis, serologic study, biologic tests for pregnancy and determination of the basal metabolic rate, should be employed as indicated.

2. *Consideration of Menstrual Physiology.*—Inasmuch as estrogen is a potent force in the regulation of menstruation, knowledge of the patient's menstrual cycle is of paramount importance. Despite the fact that most physicians have some understanding of the current concept of menstrual physiology, and at the

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risk of being somewhat pedantic, a brief review of its cardinal features is presented.

The cyclic ovarian changes are governed by the follicle-stimulating, luteinizing and luteotrophic hormones of the anterior lobe of the hypophysis. These are responsible for maturation of the follicle, ovulation, luteinization and maintenance of the corpus luteum. The recurring changes in the endometrium are, in turn, dependent on the hormones estrogen and progestin, secreted respectively by the ovarian follicles and the corpus luteum.

At the conclusion of the menstrual flow, resulting from the presence of estrogen, the endometrium changes from a thin layer of cells practically devoid of glands to a tall, richly glandular tissue. Throughout this phase, the cells of the endometrial glands are filled with the growth-associated enzyme, alkaline phosphatase.[1] After the ripening of one follicle, ovulation occurs during the midportion of the cycle. The empty follicle collapses and is transformed within a few days into a corpus luteum. The luteotrophic gonadotrophin supports the continued function of the corpus luteum, stimulating the production of both estrogen and progestin for a limited time.

During the second half of the cycle, progestin causes the estrogen-primed endometrium to become a hyperemic, highly functional tissue. The cells of the endometrial glands are, at this time, richly endowed with the nutritive substances which are necessary for the embedment and support of a fertilized ovum. If fertilization does not occur, the corpus luteum disintegrates because of failure to receive the support of trophoblastic luteotrophin. Almost immediately thereafter, the endometrium, so earnestly constructed to house a pregnancy, suffers from the withdrawal of the corpus luteum hormones and is dismantled by the process of menstruation.

3. *Evaluation of Pharmacologic Principles.*—The ovarian hormones, estrogen and progestin, belong to the steroid family of hormones, a group which also includes androgens and the adrenocortical hormones. The ovarian steroids have been chemically identified, their structural formulas are known, they are available in pure crystalline forms and have been made synthetically. They are stable and will remain potent indefinitely without refrigeration. Inasmuch as they contain no protein, neither of them per se gives rise to allergic manifestations, but they are frequently dispensed in vegetable oils which have been known to evoke sensitization. They may be administered intramuscularly, orally and by absorption through skin or mucous membrane. They have the significant dual ability of acting both on the genital end organs and on the anterior lobe of the hypophysis. The latter propensity, especially true of estrogen, has bearing in its use in the regularly menstruating woman because it may disturb the rhythm of her cycle by depressing the production of hypophysial gonadotrophins.

4. *Selection of Patients.*—Of equal importance with the previously stated maxims is the realization that no 2 patients ever present the same endocrinologic problem. The value of such individualization is clearly emphasized by the varied treatment accorded the same endocrinopathy at different ages. Moreover, not only must treatment be directed to the disorder in question, but it must also be so administered that associated derangements are aided. Whenever necessary, advice relevant to better living habits and to the solution of unsolved social problems should be proffered. Finally, adjuvant medication, such as iron, and dietotherapy should not be overlooked.

USES OF ESTROGEN

The physiologic effects of estrogen make it clinically useful in three broad categories—to achieve growth of all or part of the genital tract, to depress temporarily the function of the anterior lobe of the hypophysis and to effect an antiandrogenic action. In the first instance are included the treatment of atrophic vaginitis and the adjunctive therapy of amenorrhea; in the second, the suppression of lactation and the alleviation of the menopausal syndrome, and, in the third group, the temporary resolution of the metastatic lesions of prostatic carcinoma and the restraint of postoperative erections following penile plastic operations.[2]

Atrophic Vaginitis.—Postmenopausal vaginitis occurs because of the extreme vulnerability of the atrophic vaginal mucosa to trauma and infection. The cessation of ovarian function, depriving the vagina of the trophic effect of estrogen, results in diminution of the layers of the epithelium, disappearance of the glycogen content of the cells and loss of the protective vaginal flora. Deprived of these natural barriers to infection, the vagina becomes fertile soil for bacterial growth. The atrophy and subsequent infection give rise to the symptoms of irritating leukorrhea, introital paresthesia and dyspareunia. Trichomonas vaginalis is often a secondary invader under such circumstances.

Since the absence of estrogen is the basic cause of this disorder, it is logical to administer estrogen to restore the vaginal epithelium to its former height and state of resistance. The dosage of estrogen employed for this purpose should be small, inasmuch as the vagina responds to very small quantities. It may be given effectively orally as either 0.5 mg. of diethylstilbestrol or 0.625 mg. of estrone sulfate daily for several weeks. Given intravaginally, smaller quantities of estrogen may be employed. The nightly introduction of a vaginal suppository containing 0.2 mg. of estrone is satisfactory, but many patients object to it because of nocturnal soiling. However prescribed, the estrogen should be discontinued within a month and repeated only if required for a recrudescence of symptoms.

Secondary Amenorrhea.—The causes of secondary amenorrhea are so protean that intelligent therapy cannot be applied without a complete investigation of the constitutional background of each amenorrheal woman. The treatment of amenorrhea with estrogen alone is notoriously unsatisfactory. Estrogen evokes only the proliferative phase of endometrial growth. Although uterine bleeding may result from such growth, it is not menstruation.

The objective of estrogen therapy in amenorrhea is the cure of uterine hypoplasia. If such atrophy—perhaps the sequel of a previously existing pituitary-ovarian deficiency—is the sole cause of the amenorrhea, fair results may be obtained from treatment with estrogen. In such women, the endometrium is rebuilt to a point of normal responsiveness, and, in effect, the estrogen acts merely as the "starter" which sets the abeyant cycle in motion. Unfortunately, this applies to few amenorrheal women.

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[2] Vermooten, V.: Value of Estrogens in Penile Plastic Operations, J. Urol. **58**: 391 (Nov.) 1947.

An effective technic of employing estrogen in the treatment of amenorrhea is its administration with the corpus luteum hormone, progestin. They may be given either together, as a combined injection, or separately in consecutive manner. In the former method, the amenorrheal patient may be given a combined intramuscular injection of 2.5 mg. of estradiol benzoate and 12.5 mg. of progesterone on two successive days. Using the consecutive style, one may administer 1.5 mg. of estradiol benzoate intramuscularly every third day for five doses and follow immediately with five daily injections of 10 mg. of progesterone. Such dual therapy, combined or cyclic, is generally repeated for three consecutive months.

When parenteral medication is to be avoided, estrogen and progestin may be administered orally. A suitable schedule, for example, is the use of 2 mg. of diethylstilbestrol daily for fifteen days, followed by 60 mg. of pregneninolone, the "oral progestin," daily for five days.

It must be remembered that *neither estrogen alone nor estrogen with progestin gives permanent results in amenorrhea unless other measures are taken simultaneously to restore the general health of the patient.*

Puerperal Engorgement of the Breasts.—One of the most satisfactory uses of estrogen is the prevention of breast engorgement when postpartum inhibition of lactation is desired. If the administration of estrogen is started immediately after delivery, there is generally entire freedom from pain and engorgement, as well as distinct depression of lactation. In fact, when suckling is not permitted, lactation, in the clinical sense, rarely occurs. If the administration of estrogen is started after lactation has been established, relief from engorgement and subsidence of lactation are hastened.

The dosage of estrogen required to prevent puerperal breast engorgement is relatively small. Intramuscular administration for this purpose is not required. As little as 1 mg. of diethylstilbestrol, or its equivalent in natural estrogen (such as 1.25 mg. of estrone sulfate), given orally three times daily for a week is adequate. The estrogen is then best withdrawn gradually by a reduction of one dose daily for several days.

The danger of administering estrogen during the puerperium is its propensity to create hyperplasia of the regenerating endometrium, which may result in abnormal bleeding. This unwanted effect may be avoided by employing only small doses of estrogen for a limited period and by discontinuing its use gradually.

Menopausal Syndrome.—Most women do not require treatment for the menopausal syndrome. In this majority group, the flushes, nocturnal sweats and nervous instability are mild and may be completely mitigated by consultation alone. An explanation of the temporary nature of the symptoms and of their tendency to disappear spontaneously after a variable time, coupled with the sympathetic prescription of a mild sedative, may be all that the patient requires. However, when the symptoms are troublesome, there is no more specific therapy than estrogen.

The orally administered estrogens are ideal for menopausal therapy; there is virtually no need for parenteral administration. The smallest oral dose required to assuage the vasomotor symptoms should be prescribed. Whether one employs a daily dose of 0.5 mg. of diethylstilbestrol, 0.625 mg. of estrone sulfate or 0.02 mg. of ethinyl estradiol is immaterial. The important rules are to prescribe the estrogen for a limited period and to withdraw it in a gradual manner. The most prevalent abuse in the usage of estrogen is the prescription of a routine daily dose to be taken more or less indefinitely. This often results, even in women in whom menstruation has long since ceased, in the occurrence of uterine bleeding. Such bleeding also frequently follows sudden withdrawal of the estrogen. It must be emphasized that the objective of estrogen therapy of the menopausal syndrome is to aid the patient's adjustment to the diminution and cessation of ovarian function. This logical aim is lost if the estrogen is not prescribed for measured periods, with repeated attempts to withdraw the hormone entirely. When the latter is accomplished gradually, withdrawal bleeding is generally avoided.

Postmenopausal uterine bleeding evoked by estrogen is most often caused by faulty dosage and incorrect method of withdrawal. It does, however, also occur in some of the properly controlled patients, in whom the *endometrium is peculiarly sensitive to estrogen.*

The unfortunate faculty of estrogen of inducing uterine bleeding in the postmenopausal woman is indirectly responsible for many instances of neglected carcinoma of the uterus. Prior to the almost universal use of estrogen for the relief of the menopausal syndrome, postmenopausal metrorrhagia was most frequently the result of uterine carcinoma. However, the current prevalence of estrogen usage has altered the incidence. The physician, faced with postmenopausal bleeding, may unfortunately lapse into a false state of security, tending—without proper examination of the patient—to attribute the bleeding to previously administered estrogen. The natural and proper suspicion in all cases of postmenopausal uterine bleeding should be carcinoma of the uterus, and the attending physician should be impelled to inspect the cervix (executing a biopsy if indicated) and to perform diagnostic curettage. That these admonitions are not universally borne in mind is well illustrated by the recorded experience of many cancer clinics. In support of this, we are privileged to cite statistics from the files of the Philadelphia Committee for the Study of Pelvic Cancer, a commission devoted to study of the histories of patients with pelvic cancer in order to analyze the factors which delay diagnosis. From December 1945 to December 1946, this committee uncovered 116 instances of unwarranted delay in the diagnosis of pelvic cancer. Of these 116 instances, 78 were classified as "physician delay" and the remaining 38 as "physician and patient delay." More significant, perhaps, is the disturbing fact that 31 of the 116 patients were given medication, oral or hypodermic, in the presence of symptoms suggestive of uterine cancer, without examination. Such a practice, particularly if the patient presents abnormal uterine bleeding, is reprehensible and criminally negligent. That such neglect may stem directly from indiscriminate prescription of estrogen is illustrated by the following 2 case histories selected at random from the 116 mentioned:

Case 1.—G. N., a white woman aged 41, had prolonged, scanty menstrual flow and menopausal vasomotor symptoms in January 1946. During February she bled intermittently for two weeks. She was advised by a physician in March—without benefit of pelvic examination—that she was "changing" and that she required "needles." The latter were given twice weekly for two months with relief of the vasomotor symptoms but not of the metrorrhagia. At that time, May 1946, the patient visited another physician who removed "a small growth from the mouth of the womb" and advised additional "injections." These were administered weekly until the end of June, when the patient experienced a sudden vaginal hemorrhage. The final diagnosis was squamous cell carcinoma of the cervix, stage III.

Case 2.—A. W., a Negro woman aged 50, had a sudden episode of menorrhagia and summoned a physician who did not examine her but prescribed tablets "for the change of life." Menorrhagia was repeated the next month and was followed by intermittent metrorrhagia. Noting no relief after taking the medication for two months, the patient saw a second physician who examined her and recommended admission to a hospital. The diagnosis was squamous cell carcinoma of the cervix, stage III.

These histories are shocking examples of the glaring omission of pelvic examination and of the too facile prescription of estrogen. No further comment seems necessary to emphasize the importance of pelvic examination before prescribing estrogen. Frequently, however, mere pelvic examination is not sufficient. When a postmenopausal woman who has taken estrogen begins to bleed, one does not know whether the bleeding is estrogen evoked or caused by cancer. In this dilemma, the physician may either wait expectantly, observing the effect of the complete withdrawal of estrogen, or he may perform an immediate diagnostic curettement. If he decides to wait, it is his duty to keep the patient under close observation in order that the curettage be done promptly should the bleeding continue. If estrogen evokes bleeding in a menopausal woman, she should avoid such therapy in the future. If the patient's persisting, severe, menopausal symptoms demand treatment, one may resort to testosterone propionate at a parenteral dosage of less than 300 mg. monthly—a quantity which ordinarily does not induce virilization.

Estrogen should never be administered in anticipation of menopausal symptoms. Its allegedly prophylactic use, advocated for the prevention of symptoms which may follow surgical castration, seems to be highly illogical and unnecessary. As stated previously, many women who suffer a loss of ovarian function experience no symptoms and require no therapy. In others who do, temporary estrogen therapy should be governed solely by the severity of complaints.

Prostatic Carcinoma.—The endocrine theories of Huggins[3] regarding advanced prostatic cancer have led to the recent use of estrogen in its management. Carcinoma of the prostate is often stimulated to growth by androgen. Conversely, in many patients, the inactivation or diminution of circulating androgen results in temporary regression of the cancer. This is true of malignant cells in the prostate gland and in the metastatic lesions. A decrease of circulating androgen may be accomplished by either castration or the administration of estrogen. Although castration does terminate the production of androgen of testicular origin, it does not affect the adrenal secretion of the hormone. In fact, castration may, by stimulating the functional activity of the anterior hypophysis, result in an increased supplemental secretion of androgen by the adrenal glands. It is, therefore, contended by some that the administration of estrogen, through its pituitary-depressing action, may be more effective than castration in curtailing the production of androgen.[4] The urologists have resolved this controversy by the simple expedient of employing both castration and estrogen in the treatment of prostatic cancer. Moreover, estrogen is especially valuable in men who, despite previous castration, are suffering from metastases of prostatic cancer. In such patients, estrogen not only alleviates the symptoms of the metastases, particularly the pain of osseous lesions, but also lowers the serum acid phosphatase. The latter is a definite reflection of the regression and lessened activity of the metastatic cancer cells. It must be emphasized, however, that such treatment is not curative. The estrogen-evoked diminution of the primary growth and the recession of metastases are temporary improvements, maintained for variable periods of time.

Both the synthetic and the natural estrogens may be employed in this form of therapy. The dose is entirely empiric, but should be sufficient to obtain a clinical effect. The use of diethylstilbestrol permits the best oral dosage, an adequate quantity being 1 or 2 mg. three times daily. Estradiol benzoate or estradiol dipropionate may be administered intramuscularly, especially in initiating therapy, at a dose of 5 mg. twice weekly. The duration of the estrogen therapy must be determined by the disappearance of clinical evidence of the prostatic cancer or of its metastases and by the degree of gynecomastia, an untoward side effect of the treatment. There is, of course, no objection to repeated courses of estrogen—as long as the patient properly responds to its use.

ABUSES OF ESTROGEN

There are several prevalent abuses in the clinical application of estrogen, some of which are potentially dangerous. In addition to the thoughtlessness of failing to limit the duration of treatment with estrogen, as discussed previously, physicians often overlook certain contraindications to its use. Estrogen therapy, we believe, should be avoided in the following circumstances.

Premenopausal Menstrual Irregularity.—The current tendency to prescribe estrogen for women during the fifth decade because of indefinite "middle-age complaints," manifestations rarely of menopausal origin, should be condemned. Estrogen therapy of the menopausal syndrome is intended to alleviate the vasomotor, nervous and arthritic symptoms in a woman who has ceased to menstruate. Estrogens are ill advised in the woman approaching the menopause who has vasomotor symptoms but who also exhibits irregular menstruation. Under such circumstances, estrogen may result in even more irregular bleeding and may also prolong the climacteric adjustment. The danger of confusing estrogen-evoked bleeding with metrorrhagia of more serious origin has already been discussed.

Residual Endometriosis.—Estrogen is contraindicated in women who have castration symptoms after the removal of both ovaries because of endometriosis. It must be assumed that any patient who has undergone bilateral oophorectomy because of advanced and disseminated endometriosis still harbors foci of ectopic endometrium in the remaining pelvic tissue. Such foci are but asymptomatic, microscopic lesions following the regression of castration. It should, however, be no surprise that these receded endometrial lesions are reactivated by the administration of estrogen. The resultant symptoms depend entirely on the site of the resurgent tissue. If, for example, the residual endometrium lies in the rectal wall, estrogen-evoked functional reactivation may result in serious intestinal hemorrhage.[5] It is best, then, to avoid estrogen entirely in any woman castrated because of endometriosis. If her castration syndrome cannot be controlled by means of sympathetic reassurances and mild sedatives, androgen therapy should be tried.

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[3] Huggins, C.: Prostatic Cancer Treated by Orchiectomy: The Five Year Results, J. A. M. A. **131**: 576 (June 15) 1946.

[4] Heckel, N. J.: Evaluation of Sex Hormones in the Treatment of Benign Prostatic Hypertrophy, Carcinoma of the Prostate, and Other Diseases of the Genito-Urinary System, J. Clin. Endocrinol. **4**: 166 (April) 1944.

Carcinoma Background.—The impression has been created that estrogen is carcinogenic, particularly in regard to carcinoma of the breasts and uterus. This implication arose from the induction of cancer in experimental animals. In such experimentation, either cancer-susceptible strains or huge dosages of estrogen were employed. The results of such laboratory investigations are not directly applicable to man. For instance, it is impossible to administer quantities of estrogen in a human being comparable to those given to experimental animals.[6] Moreover, the clinical evidence of the alleged carcinogenic tendencies of estrogen in the human female is purely clinical and, therefore, rather indirect.[7] Nevertheless, there are so-called "cancer families," in whom a susceptibility to cancer appears to be dominant. The suspicion must be entertained that women of such families have a potentially malignant substratum. Even though it is generally agreed that estrogen per se is not carcinogenic, it cannot be denied that it is a stimulant to growth of the breasts and uterus, which are frequent sites of carcinoma in the female. There is also no doubt that estrogen will accelerate the rate of growth of an existing carcinoma of either the uterus or the breast, as well as of any metastasis derived therefrom. This is best evidenced by the salutary effect of castration following radical mastectomy for carcinoma. If there is, then, a clearcut history of multiple instances of either mammary or uterine cancer in a patient's family, it is safer not to administer estrogen to that patient. It is an obvious corollary that estrogen is also contraindicated if the patient herself is a salvaged survival type of malignant neoplasia.

Palpable Benign Tumors.—The mammary ducts and the connective tissue around them are stimulated to growth by estrogen. It should not, therefore, be administered—for any reason—to a patient who has, or who has recently had excised, a fibroadenoma of the breast.

The presence of a palpable uterine fibromyoma constitutes a contraindication to the use of estrogen. Although the quantity of estrogen required to induce growth and increased vascularity of an existing myometrial tumor is not known, it is conceivable that even minimal dosage could exert an adverse effect.

Hepatic Insufficiency.—It is well established that the integrity of the liver is important to the normal metabolic fate of the steroid hormones, including estrogen.[8] The liver, for instance, through its inactivation of circulating estrogen, plays a dominant role in determining how much biologically free, circulating estrogen is available to effect changes in estrogen-stimulated end organs, such as the mammary glands. This is well illustrated by the recently reported syndrome of gynecomastia and testicular atrophy in association with cirrhosis of the liver.[9] The gynecomastia and testicular atrophy result from the failure of the cirrhotic liver to metabolize estrogen properly, permitting the circulation of a too potent form. Although it cannot be shown that these untoward effects of improper estrogen metabolism occur in any but the most advanced instances of hepatic disease, it is conceivable that severe hepatitis may temporarily result in hepatic decompensation sufficient to cause failure of estrogen inactivation. In fact, it is asserted, on the basis of animal experimentation and some clinical data, that the steroid inactivation function of the liver is controlled by certain nutritional factors.[10] Prominent among the latter is vitamin B complex, although certain amino acids and the total protein intake are also important.[11] Although the nutritional concept has not met with universal acceptance,[12] the possibility of deficient hepatic inactivation of estrogen—albeit one requiring severe hepatic disturbance[13]—is recognized. Therefore, it seems wiser, at least until further investigation clarifies the problem, to avoid the use of estrogen in patients giving a recent history of hepatitis.

SUMMARY

Four prerequisites of the clinical use of estrogen are defined.

The currently accepted usages of estrogen in the treatment of atrophic vaginitis, amenorrhea, puerperal engorgement of the breasts, the menopausal syndrome and metastases of prostatic cancer are critically reviewed. It is observed that oral administration of estrogen is entirely satisfactory, except in certain instances of amenorrhea and in the alleviation of the pain of prostatic cancer, which respond best to parenteral therapy.

It is emphasized that estrogen should never be prescribed without a specific limitation of time. This is especially important in the menopausal patient in whom estrogen is apt to evoke diagnostic disturbing uterine bleeding, impelling uterine curettage. The importance of the latter is illustrated by the citing of 2 instances of neglected uterine carcinoma.

The specific contraindications to estrogen therapy are reaffirmed. The reasons for avoiding estrogen in women exhibiting menstrual irregularities, giving a history of endometriosis, having a family background of cancer, presenting palpable mammary or uterine tumors or suffering hepatic insufficiency are restated. The regrettable use of estrogen as an "all purpose female tonic" is condemned.

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PHYSICAL MEDICINE AND PSYCHIATRY, SOME INTERRELATIONSHIPS

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Psychiatrists have probably been interested in physical medicine longer than the practitioners of any other specialty. Even in the time of Hippocrates prolonged warm baths were recognized as of value in certain mental conditions, and as long as there have been institutions for the care of the mentally ill, which made any pretense whatever of treatment, various physical methods have been employed. Hydrotherapy is, of course, the oldest, but there was a time when the static spark and the faradic current were used as well in treatment, the modus operandi being largely psychologic. Within the last ten years the almost undue attention paid to the electroconvulsive type of psychiatric therapy has diverted a good deal of attention from the better established methods of treatment, but it certainly has emphasized the usefulness of physical medicine in the field of psychiatry.

Psychiatry and physiatry have certain things in common: both are new specialties, and both arose under conditions which occasionally savored of charlatanry, with the result that certain suspicions still linger in the minds of some segments of the public. Research in the methods of causation, prevention and treatment has been only very recently developed in either field. Today, however, both have achieved standing and general acceptance as important specialties, built on a sound foundation of investigation and scientific study. There is still need of much further knowledge, however, and need of trained personnel.

It is gratifying to the psychiatrist to see the interest displayed by the practitioners of physical medicine in the psychiatric aspects of their work. So much attention has been devoted to the effects of the various modalities on the tissues and their functions that there has been at times a tendency to overlook the psychologic effect of the methods employed. The more recent work in the field of what has come to be rather cumbersomely termed "psychosomatic medicine" has done much to bring together the thinking of the psychiatrist and the physiatrist. Psychosomatic medicine is, strangely enough, not a new term. It was used in psychiatric literature in Germany over one hundred years ago, but has recently been resuscitated and refurbished so as to give the impression that it is a new discovery. This rediscovery was greatly facilitated by the contributions of William Alanson White and Adolf Meyer, and their interpretations of the "organism-as-a-whole," the concept, that is, that what we refer to as "mind" is merely one aspect of biologic functioning, that this "mental" functioning represents the adjustment at the social level to environmental influences, past and present, internal and external. More recent physiologic researches, stimulated by Cannon and followed up by Wolff and others, have demonstrated effectively the influence which the emotions exert on physical functioning. So much attention has been paid to this aspect of psychosomatic medicine that the obverse of the picture has sometimes been overlooked, namely, the fact that the malfunctioning of the physical organism has much to do with the emotional response of the patient. In other words, the person who is physically ill is not the same person emotionally as he was when he was enjoying good physical health. The hyphen (if "psycho-somatic" were written with one) should be thought of as a two way sign rather than as having one direction only.

More recently another type of treatment long used in psychiatry has been officially taken under the aegis of physical medicine, namely, occupational therapy. Occupational therapy, that is, the application of various types of occupation to the treatment of neurologic and psychiatric disorder, is a valuable adjunct to the application of physical means, such as heat, electricity and massage. Occupational therapy gives vent to the patient for his aggressions; it redirects his interest in topics outside himself and can be useful in developing skills and talents and in determining emotional and physical limitations and handicap levels. It is of value not only in the mental hospital but in the rehabilitation clinic and in dealing with many types of patients who have both physical and psychologic problems. After all, every patient who has one is likely to have the other; the interaction of the two should never be overlooked.

One hears much nowadays of psychotherapy, one of the oldest forms of treatment, but one which is only recently becoming more or less formalized. Presumably every successful physician in every era has utilized psychotherapy as a part of his armamentarium, whether he knew it or not. Psychotherapy is defined by Whitehorn as "the art of modifying a patient's attitudes in a more healthy direction by the personal influence of the therapist." Certainly the physiatrist is in an extraordinarily good position to exert this particular form of influence. In the first place, he has the authority of the physician. The patient comes to him with his complaint expecting that the physician will help him toward greater comfort and efficiency. He finds in the physician's office certain apparatuses which in this day of science make a profound impression. These apparatuses, to be sure, have known physical effects, effects concerning which more is learned daily, but effects which are nevertheless clearly demonstrable.

The fact that in addition there is a symbolic value to these impressive instruments does not in the least detract from their value, their efficiency or usefulness. The patient may, for example, be suffering from some joint, muscle or nerve disability which causes substantial physical handicap. This is a field in which the physiatrist can be of great assistance from the strictly physical point of view. He can do much for his patient as well, however, if he bears in mind that the patient is suffering at the same time from anxieties and concern over the ultimate outcome of the disability and its effect on his economic status or his physical appearance. The importance of the motivation of self recognition, of facing the facts and of encouragement in the case of physical handicaps is coming to be widely recognized. Reassurance and encouragement may, of course, be overdone, but when they are properly administered they can be extremely useful for the patient's peace of mind and happiness. The confidence of the operator, his readiness to deal with situations as they come up and his general behavior are more important than words in giving a feeling of assurance and confidence to the patient. It should be borne in mind that some patients, particularly the more dependent type, are particularly searching for assurance. This is one reason that the quack is so successful, for his chief stock in trade is

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assurance and the more ignorant he is the more positive his assurances. It is important for the well trained physiatrist not to misrepresent, not to overpraise and not to make promises which he cannot keep, but he can at the same time make it clear to the patient that he is aware of the latter's needs and that he proposes to do everything possible to meet those needs and restore the patient to a useful and happy life.

Sometimes difficulty is experienced in breaking the dependency of a patient on the physician. This is particularly true of the physiatrist because of the personal contact. Some patients derive a certain amount of erotic satisfaction from the manipulations which they undergo; others are encouraged by these manipulations to fancy themselves in an earlier state, to regress to a level of childhood in which they are fondled by the parent. These situations can develop into rather awkward complications, and they call for a good deal of psychologic understanding on the part of the physiatrist and the utmost of tact and discretion. In certain types of cases it is obvious that massage and other physical manipulations should be avoided on account of their erotic effect. This is especially true in patients with a pronounced homosexual component, for example.

The possibility that the symptoms complained of may be essentially psychogenic should never be overlooked. In an interesting study published recently by Watkins, Cobb, and others [1] it was found in a series of 45 patients who complained primarily of fatigue that about 80 per cent of them were suffering from anxiety neurosis. There is a danger in such cases that overattention to the physical complaint may serve, so to speak, to fix it by directing attention to it and make it more difficult to deal with by psychotherapy. I do not mean by this that the physiatrist should try to make a psychiatrist of himself any more than the reverse should be the case. The two specialties are complementary; indeed, psychiatry is to some extent complementary to all the other specialties in the sense that no specialist can afford in justice to his patient or to himself to overlook the psychologic factors in disease. This does not mean that the psychologic factors may be dealt with only by the psychiatrist. Even if the patient could be induced to consult a psychiatrist, as often he cannot, there are not enough psychiatrists to take care even of the urgent cases. If progress is to be made in the field of psychologic medicine, it must be made by means of the recognition by other specialists of the psychologic factors and their readiness to deal with at least the simpler and more obvious, though sometimes overlooked, factors. The recognition of the unity of the patient, the fact that the patient who comes to the physician is a whole person made up of various organ systems, all of them functioning in a body which in turn is impinged on by external influences of the physical environment and in the form of social and interpersonal forces, influences to which that person is reacting as a unit, is essential, whatever the physician's specialty. The patient's fears, his anxieties, his frustrations, his aggressions, his conflicts and his feelings of guilt must all be taken into account if we mean what we say about the unity of the organism. There is no doubt that this recognition is becoming widespread in the specialty which deals with some of the tangible and demonstrable physical means of healing; namely, physiatry. Much progress has been made, but much room still remains for research, research which can well be carried on jointly by the psychiatrist and the physiatrist.

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ISOTOPES FOR MEDICINE

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This year marks two important anniversaries for radioactivity in the fields of biology and medicine: (1) the golden anniversary of the discovery of radium for use in radiation treatment and (2) the silver anniversary of the use of radioactive atoms for tracing stable atoms—that is, of the tracer atom technic.

Fifty years ago radium was discovered by Pierre and Marie Curie in France. This led to the wide and valuable use of radioactivity for radiation treatment of certain diseases, particularly cancer. Twenty-five years ago Hevesy in Denmark first used radioactivity to trace the course and behavior of a stable element in a biologic system. This was the inception of the technic of tracing the atoms of stable elements by means of their radioactive counterparts—the radioactive isotopes of that element. The first tracer experiments were done with the naturally occurring radioactive isotopes and were limited to the tracing of the heavy elements lead and bismuth.

As long as radioactivity was a phenomenon found only in the heaviest elements—elements which have little or no presence in biologic material, the use of radioactivity for purposes of treatment or tracer studies was limited in scope. Then came the miraculous discovery by Curie and Joliot in 1934 that ordinary elements, which in nature are found in the stable state, can be induced to become radioactive. It was soon observed that radioactive isotopes could be formed of nearly all the elements. This includes most of the elements that occur in biologic material. The door was thus opened to a wide variety of new possibilities for research and application in biology and medicine.

This was like the fulfilment of a cherished dream. Now investigators had at their disposal radioactive atoms of a wide variety of elements which could be applied in unique ways to biologic and medical problems. The man-made radioisotopes offered new ways of delivering radiation treatment directly to various tissues of the body, as well as a means of following atoms in the thousands of complicated reactions which go on in the human body, either healthy or diseased.

This door to new medical knowledge and application, opened by the advent of artificially produced radioisotopes, did not, however, open wide at first. The man-made radioisotopes could be made in significant quantities only by the use of very high energy nuclear bombardment devices or "atom smashers" such as the cyclotron. Not only were these devices limited in number but the amounts of radioactive materials produced were not sufficient for wide scale application and were rather expensive.

A vastly wider opening of the door into the new world of opportunity in medical research and application became a possibility with the operation of the first successful chain reaction in uranium—the operation of a "nuclear reactor" or "atomic pile"—a development of the wartime atomic energy project. This possibility, however, was not immediately capable of realization because of the secrecy and special purpose which surrounded the wartime program. Actually the new door was really opened wide for the first time just two

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years ago, in June 1946, when it was announced that pile-produced radioisotopes would be made available outside the atomic energy project.

Thus, although we have come to the golden and silver anniversaries of the start of two important uses of radioactivity, we are now just coming to the second, or "cotton," anniversary of the wide scale opportunity to realize all the possibilities that radioactive atoms offer in biology and medicine.

I do not wish to generalize further on the subject in this paper. Rather I will give some specific data on the distribution of isotopes for medical and biologic purposes accomplished during the two years of the project's isotope program. Also I will note briefly some examples of the uses actually being made of isotopes in medical research, diagnosis and treatment.

For the first twenty-two months of the distribution of pile-produced isotopes, i. e., from Aug. 2, 1946, to May 30, 1948, I have the following data for the number of shipments, number of using institutions and number of individual projects in which the isotopes are being employed.

Total Number Shipments
  1. For studies in animal and human physiology and medical therapy—2,103
  2. For all fields of study—2,901
  3. For all fields now over 200 per month
Number of Institutions Using
  1. Phosphorus 32 in medical therapy—43
  2. Iodine 131 in medical therapy—38
  3. Radioisotopes in medicine and biologic studies—119
  4. Radioisotopes in all fields of study—229
Number of Individual Projects
  1. In medicine and biologic studies—over 700
  2. In all fields of study—over 1,400

It is evident that the major share of the shipments of isotopes are for investigations in medical therapy and in studies in animal and human physiology. The combination of these two accounts for over 70 per cent of all the shipments. Other biologic uses (studies in plant physiology and bacteriology) account for about 6 per cent of the shipments. The remaining fields of use —chemistry, physics, industrial research and metallurgy —account for about 20 per cent of the shipments.

One reason for the large number of shipments in medical therapy is that the radioisotopes being used, largely P^{32} and I^{131}, are of short half-life, approximately fourteen and eight days respectively. The same situation exists to a large extent in the case of studies of animal physiology. If the data are analyzed in terms of number of individual projects rather than shipments the greatest use is still in the fields of medical therapy and studies of animal and human physiology, but these two fields then account for about 50 per cent of the total.

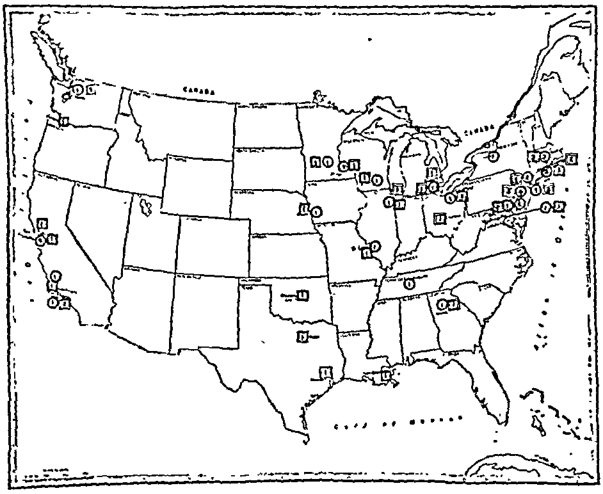
Of the radioisotopes used in medical therapy, I^{131} and P^{32} account by far for most of the shipments. The number of *shipments* of I^{131} slightly exceed those of P^{32} largely because the half-life of I^{131} (eight days) is shorter than that of P^{32} (fourteen days). Because of the greater rapidity of decay of I^{131}, shipments are required more frequently. In the first twenty-two month period, a total of over 30,000 millicuries each of I^{131} and P^{32} have been distributed. Only a very limited use of other isotopes has been made for experimental therapy, namely, of gold 198, calcium 45, strontium 89 and cobalt 60.

In studies of animal and human physiology, most use is made of three radioisotopes, iodine 131, phosphorus 32 and carbon 14. The number of shipments is in the order I^{131}, P^{32} and C^{14} largely because the length of half-life increases in this order. The actual number of using projects, however, is about the same for all these three isotopes, with P^{32} somewhat in the lead. In addition, sulfur 35, sodium 24, potassium 42, iron 55 and 59 and calcium 45 have been used extensively.

Shipments of pile-produced radioisotopes for therapy and medical research are being made to about thirty states. Most of these states are east of the Mississippi River. The largest number of shipments for therapy is to New York state, and Massachusetts, Minnesota, Pennsylvania, Ohio, California and Texas follow along closely with somewhat decreasing number.

With respect to the number of shipments for medical research, Massachusetts leads, with New York, California, Ohio, Illinois and Michigan following closely. The number of shipments for bacteriologic research are much smaller than for the other two fields, with California in the lead and Maryland, Illinois and Connecticut following, in that order.

The greatest number of shipments have been received in the Northeast area, largely because there are a greater number of academic and research institutions and a higher population in that section of the country. Another important reason, however, is that before the war there were a considerable number of cyclotron laboratories distributed throughout the Northeast, and these helped to institute the use of radioisotopes in the immediately surrounding regions. Accordingly, after the war, when pile-produced isotopes became available, the institutions and persons that had previously had experience with cyclotron-produced isotopes were most readily able to take advantage of the new opportunities. California, which was the birthplace of the cyclotron, is one of the states leading in the number of shipments received.



Geographic location of institutions using radioiodine and radiophosphorus for medical therapy. The location of phosphorus users (total 43) is indicated by a square and iodine users (total 38) by a circle. The figure in the square or circle indicates the number of institutions at that location which are using the materials for medical therapy.

In the figure is shown the geographic location of institutions using radioiodine and radiophosphorus for medical therapy. The figure does not attempt to show the locations of all the hundred and nineteen institutions spread throughout thirty states, which are using radioisotopes in medicine and biologic studies.

It is to be noted that the using institutions cluster around the largest centers of population. New York city leads, with the largest number of using institutions, with Philadelphia and Boston next. It is evident here again that the institutions which were previously in the vicinity of operating cyclotrons before the war have been those most immediately able to engage in the use of pile-produced radioisotopes.

It is difficult to give a complete picture of the varied ways in which radioisotopes are being used in approximately seven hundred projects concerned with medicine and biology. I will try, however, to give a partial indication of the scope and importance of all the uses by a few selected illustrations of actual uses. These are outlined briefly for the isotopes iodine 131, phosphorus, 32, carbon 14, sulfur 35 and calcium 45.

Illustrations of Uses of I^{131} in Physiology and Medicine
  Diagnosis
    1. Disorders of the thyroid gland
    2. Thyroid carcinoma and metastases
    3. Localization of brain tumors with diiodo-fluorescein
  Treatment
    1. Hyperthyroidism
    2. Thyroid carcinoma and metastases
  Research
    1. Physiology of liver and gallbladder with labeled tetraiodo-phenolphthalein sodium salt
    2. Renal function in terms of labeled iodopyracet "clearance"
    3. Rate of entrance and exit of labeled iodopyracet in the eyes

Illustrations of Uses of P^{32} in Physiology and Medicine
  Treatment and study of blood dyscrasias—leukemia, lymphosarcoma, polycythemia, multiple myeloma
  Metabolic studies
    1. Labeled nucleoprotein in the metabolism of bacteria and host tissues
    2. Phospholipid synthesis
    3. Exchange of radio phosphorus by bones and teeth as a function of nutrition
    4. Labeled malaria plasmodium—host relationship
  Physiologic studies
    1. Vascular capacity in heart and kidney
    2. Effect of digitalis on phosphorus transfer from medium into beating heart
    3. Fate of labeled antigens and rate of antibody production
    4. Permeability of skin and placental tissue to labeled phosphatides
    5. Effect of anterior pituitary growth hormone on phosphate balance

Illustration of Uses of C^{14} in Studies of Physiology
  Metabolic studies
    1. Protein metabolism with labeled amino acids—leucine, glycine, lysine, (α)-amino adipic acid, alanine
    2. Carbohydrate metabolism with labeled intermediates—lactic, pyruvic, oxalacetic and proprionic acid
    3. Fate of labeled fats
    4. Role of steroids and estrogens with labeled cholesterol, progesterone and diethylstilbestrol
    5. Fate of labeled urethane as a possible therapeutic agent for leukemia
    6. Fate of carcinogens with labeled methyl cholanthrene and 1, 2, 5, 6-dibenzanthracene
  Pharmacologic studies
    1. Action of labeled "benadryl hydrochloride" (diphenhydramine hydrochloride), "dilatin sodium" (diphenylhydantoin sodium), digitoxin, morphine, codeine, nicotine, colchicum and atropine
    2. Fate and localization in nervous system of labeled barbiturates

Illustrations of Uses of S^{35} in Physiology
  Metabolic studies
    1. Protein metabolism with labeled amino acids—cystine, cysteine, methionine, glutathione
  Pharmacology
    1. Levels of labeled penicillin in blood and urine
    2. Rate of uptake of sulfur by cartilage, bone matrix and bone marrow
    3. To determine absorbability of thioglycolic acid and its salts through skin
    4. To determine factors influencing tissue distribution of labeled organic compounds containing sulfonamide linkages
    5. To determine mode of action of sulfonamide drugs with labeled sulfanilamide

Illustrations of Uses of Ca^{45} in Physiology
  Metabolic studies
    1. Calcium metabolism relative to hypoparathyroidism and hyperparathyroidism
    2. Calcium metabolism in eclampsia and preeclampsia
  Physiologic studies
    1. Calcium absorption in tissue, nerve, muscle, epidermis and intestine
    2. Effect of vitamin D and thyroidectomy on calcium exchange and uptake
    3. Calcium secretion in crop gland as a quantitative assay for prolactin

There are, of course, many more uses for these isotopes than shown in the outline. In addition, a wide variety of uses are being made of sodium 24, potassium 42, iron 59, cobalt 60, copper 64, zinc 65, silver 110 and gold 198.

I have had to omit an almost equally interesting story on the distribution and valuable uses of concentrated stable isotopes. Stable isotopes cannot, of course, be utilized, as radioisotopes are, for radiation treatment or for diagnosis which depends on detection at a distance, but they are useful for many tracer studies. As the result of wartime activities in the concentration of isotopes, there are now available through our facilities over one hundred concentrated stable isotopes of thirty-three elements. Of these, only heavy hydrogen (deuterium) and oxygen 18 are being used in biologic and medical investigations. Two other isotopes, carbon 13 and nitrogen 15, available from commercial sources, are also used extensively for such investigations. There remains, however, a wide selection of concentrated stable isotopes which may be useful in these investigations but for which some development is needed in technic.

I should mention also that investigators in foreign countries can obtain through the Commission twenty-nine radioisotopes of twenty elements, which are of particular value in biologic and medical studies. Although international distribution has been in effect for only nine months, shipments have been made to fourteen countries and already impressive results are being obtained in over a hundred individual projects.

Isotopes will come to be used by more and more groups as isotopic technics and applications take their destined place in laboratories and medical research centers everywhere along with other important but now routinely used tools of investigation. In the future, reports in which isotopic methods have been used as part of the investigational procedure will no doubt so completely permeate the literature and scientific meetings that such papers will no longer be set apart by special symposiums or by special reference in the title, any more than this is now done for papers in which a microscope is used. Just as microscopy and spectroscopy have become highly developed technologies for investigation, we are now nurturing and maturing an "isotopology." And, just as it is now routine to speak of spectroscopists, we will have technicians known as "isotopologists."

In this connection one should remark that research using isotopic technics is not a goal in itself. Also, the use of isotopes is no substitute for thinking and effort. First, the investigator must have a problem involving the transfer of atoms, or transport and transformation of molecules, which would be difficult or impossible to solve by already available technics. Second, he should examine the usefulness of isotopes as a tool in solving the problem in conjunction with employment of his existing methods. Complicated problems nearly always involve a carefully combined attack with all the applicable technics. Isotopic technics will give new and trustworthy results only as an added power of perception used with other complementary technics.

The Atomic Energy Commission, is, of course, eager to promote progress in the proper and effective use of the isotopes which are available from its facilities. Much has been accomplished in making desired isotopes available in suitable form and quantity. No longer need a research problem or a technical application which is dependent on a producible isotope suffer from lack of availability of the isotope. Moreover, well developed technics and very satisfactory instrumentation for the various uses of isotopes have become generally available.

The main remaining deterrent to advances in knowledge which can be obtained by employing these powerful investigational tools is the unpreparedness of most research groups to take full advantage of all the available isotopes. The greatest need now is for dissemination of detailed information on the laboratory procedures of isotope applications and for making training in these applications readily available to interested scientists.

Progress is now being made in the information and training aspects of isotope applications. Several good books have appeared or will soon appear on isotopic technics. Journals are carrying an increasing number of articles on the procedures as well as the results of work with isotopes. A new journal devoted to "nucleonics" has even appeared, and it includes numerous technical articles on the use of isotopes. Several universities have given training courses in isotope applications and have sponsored rather complete symposiums in this field. More of such courses and symposiums are expected.

The Atomic Energy Commission will be giving increasing assistance to the dissemination of information and provision of training in the peacetime developments of atomic energy. Our office is providing circulars on many aspects of the use of isotopes, and the Commission now has an Office of Technical Information for effective dissemination of unclassified information in general. The Commission has initiated a system of fellowships for training in atomic energy developments and is assisting in the establishment of training centers.

In addition, our office has an Advisory Field Service the personnel of which visit isotope users and interested groups and give direct advice to them in their own laboratories on proper procedures for the safe and efficient use of radioisotopes. Although our personnel is limited, we will be pleased to offer whatever assistance we can. I urge physicians to write to us at the Isotopes Division, Atomic Energy Commission, Oak Ridge, Tenn., concerning available information and assistance on whatever problems you think may be best approached through the use of isotopes.

It should be pointed out that although atomic energy and radioactivity can be fraught with hazard, there is really a large body of knowledge and experience on how to control them. There is no need for unreasonable or unhealthy fear of radioactivity. Knowledge and a healthy respect are sufficient. Radioactivity can be detected with extremely high sensitivity and with comparative ease; consequently, safe conditions of work or application are easy to establish.

Over fifty years' use of radium and roentgen rays have demonstrated that both of these can be applied and handled safely. Radium and roentgen rays have revolutionized the field of medicine and are absolutely essential to its modern practice. Likewise radioisotopes can be applied and handled safely. They too will help to bring about revolutionary advances in medicine, and they also will become essential components of this art and science.

The infant field of isotope applications and the newborn program of isotope distribution are already doing a man-sized job and are on the way to herculean achievements.

THE MEDICAL PROFESSION AND ATOMIC ENERGY

REAR ADMIRAL LEWIS L. STRAUSS, U.S.N.R.
Washington, D. C.

As a layman, I approach this symposium with considerable humility—aware of the easy opportunity for disaster, such as accompanied the lecture of a friend who had traveled in the South Seas and, on his return, spoke to an audience of engineers. He mentioned that when he was in the Trobriand Islands, he had been impressed by the clarity and translucence of the atmosphere. It was so clear, he said, that he could frequently see the natives standing in their dugout canoes at a distance of 10 miles. At the end of the lecture, one of the audience of engineers thanked him and commented that many present, competent to calculate for the curvature of the earth, had noted his remarkable discovery, that the natives of the Trobriands were 69 feet tall. Taking this lesson to heart, I will avoid any reference to technical matters, leaving them to be dealt with by my competent and distinguished colleagues, Dr. Shields Warren, Dr. Paul Aebersold and Dr. Stafford Warren, who take part in this program.

I would begin these brief remarks by observing that medicine has assisted at the birth of more than one of the physical sciences. The study of gases and the measurement of heat were once the exclusive province of physicians. Current electricity had its inception in medical research on nerves. It is in keeping with good precedent, therefore, that nuclear physics, the youngest of the physical sciences, should also benefit by the attention of the medical profession as life begins for it.

On the other hand, advancement in the physical sciences has regularly placed at the disposal of the medical profession new instruments, new problems and new means of solving those problems. Atomic energy has already begun to do so. And just as the progress of modern medicine may be said to date from Harvey's discovery of the circulation of the blood, so with the

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Member of the United States Atomic Energy Commission.

Read in a symposium on Atomic Energy in the General Scientific Meetings at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 22, 1948.

physical sciences, their real development began with the circulation of ideas and the free exchange of information.

The heart which provides the circulation of ideas and information in your profession, the American Medical Association, is the largest most representative body of persons charged by their choice of profession with responsibility for the health of the public. By virtue of the whole tradition of your membership, it has achieved and has accepted a position of great public trust. This position imposes a solemn and unusual obligation. A physician accepts, as his established duty, giving a part of his time, often at substantial loss, to teaching others, improving his own ability to serve and aiding in solving the health problems of his community. Medicine was probably the first science to be recognized as such, obviously because it had a vital and practical importance to every citizen. For centuries it has enjoyed special prestige and, in consequence, has had special duties.

The development of atomic energy as a military weapon through our unique engineering and scientific competence poses to medicine new and rather fearful questions. The existence of radiation hazard on a large scale is a threat to life, health and reproduction. How to handle it is a medical problem, both in theory and in practice. It is timely and proper that the American Medical Association should consider certain aspects of atomic energy control which confront the nation and which specifically face the Atomic Energy Commission, the nation's deputy in this field.

These problems concern medicine as a science and men of medicine as individuals, not only because of questions of health in time of war but also because of certain social and administrative matters which surround the use of atomic energy in peace. These latter difficulties were originally faced by medicine as a discipline and have been solved by medicine in a peculiarly gratifying and exemplary way. I refer to the solution of such problems as useful cooperation between public and private agencies, the subordination of private interests for public good, the voluntary collaboration of scientific men to forward common and predominantly lay interests. Finally, and most important as an example, is the ability of men of medicine to unite for the attainment of practical ends through the scientific method and to be able to do this without loss of scientific freedom to continue undirected individual search for new concepts.

The first question to be answered concerning the future of atomic energy was one of its ownership. Was it exclusively military property because it was first employed in a major way by the military? Was it the property of the scientists who brought it into being? Certainly neither could be considered as having title any more than that healing science should be the sole chattel of the medical profession. The moment when knowledge becomes practical technical competence affecting the well-being of everyone, then at that moment title to this competence must pass to the public domain. The rights of the citizens as a whole should, and do, wholly transcend the rights of the individual in every major instance in which they may conflict. I believe that this is a fundamental and generally accepted principle in the democratic state.

Once the title to atomic energy is established in the public domain, the delegates of the public must decide how to handle this force in the public interest. Three factors seem to bear on this decision: First, what is needed? Second, what is practicable? Third, what is expedient? To answer these questions in detail obviously involves considerations which are outside the scope of a short discussion. A general statement may suffice. It could be worded somewhat as follows: We need to make atomic energy as useful as we can for peace and, at the moment, for possible war. Usefulness in both is certainly practicable. Moreover, within certain limits, usefulness is wholly expedient. Recall that these basic decisions are made in the public interest, after due consultation with special interests which I shall later mention.

When we have concluded that atomic energy can be made useful, we have simultaneously decided that our problem is an applied one and that our planning must be set up to convert an advance in pure science to practical ends. This conversion presents serious problems, since certain hurdles exist that must first be cleared. These are three in number and old and familiar; namely, prejudice, tradition and special interests.

Up to now, prejudice against work on atomic energy, based on lack of detailed information, has been a reasonably serious handicap. Atomic energy, long on our doorstep, burst on public consciousness with an appalling detonation. Many persons still assume that explosions and devastations are uniformly its concomitants. This is, of course, no more true than that because this great city was once destroyed by fire, milking by lamplight must always produce a holocaust. Atomic energy had two generations of quiet usefulness and life-saving behind it before atom bombs were ever dreamed of. It should have centuries of orderly and unsensational application in the future.

More serious perhaps than the thought of structural ruin from the atom is the widespread impression that atomic energy is a health hazard of monumental and enduring proportions. True enough, we know it can kill in a protracted and unpleasant manner. Certainly, persons can be injured by loose and restless atomic particles, and chromosomes can be damaged, with resultant mutations. But we should remember that these changes can be produced also by any number of agents from sunlight down to the garden crocus. In other words, they are neither very new, nor very startling. It is simply that our attention is focused on them at the moment. Happily, the facts are coming to be more widely understood and fear is being replaced, though slowly, by confidence. In future, we must equally guard against overconfidence.

Tradition is the next barrier. It is serious because it is deeply impressed on the minds of many of the men and women of science on whom we must depend to carry the task forward. The fundamental tenet of this particular tradition is that science is for the scientist. This was more nearly true at a time when the acquisition of knowledge, in fields other than medicine, was completely an end in itself. It is, of course, no longer true now that the lives and rights of free men everywhere are dependent on science. A scientific subject need not be completely abstruse in order to qualify for research.

The third hurdle in the development of a useful position for atomic energy is the existence of special interests in the scientific fields. These interests are long established and strongly held. It is likewise of great importance that they be maintained. But they *should be maintained in* such a way that the early and intelligent development of the benign uses of atomic energy shall be pressed. These interests are, of course, the government departments, the industrial laboratories and the universities.

For instance, it is always simple to conceive of the creation of vast governmental laboratories, supposedly capable of solving the most refractory problems, by sheer weight of funds. But this procedure is not really an effective move, or even a desirable one, on the basis of peacetime experience. Federal departments are removed from the free enterprise system. Work in them is generally conducted on a high plane, with excellent facilities and talented personnel and often with distinguished results. They must, however, from their very bulk and permanence, be inflexible and should be. Their concern is to be right and to avoid errors. They are invaluable as reference and control activities. But science, being always unconventional, demands flexibility and unorthodoxy. These are the concomitants of competition, incentive and daring. Usually they are not found, and do not belong, in government enterprise.

On the other hand, the industrial laboratories know the value of ingenuity. They have highly developed the incentive motives and thereby have acquired staffs of great competence, admirable equipment and smooth flexible organization. These groups are ideally constituted for the conversion of fundamental knowledge to direct application. That is their business. They have, however, a serious handicap which makes their exclusive use in an activity as extensive and vital as atomic energy unworkable. This handicap is not, as is sometimes supposed, the fact that they must earn profits for stockholders. A proper profit always must be found in private operation for public ends. The real handicap for an exclusively industrial approach is the impossibility of adequately rewarding key personnel. In short, the use of the patent system to reward the inventor for brilliant strikes, profoundly implicit in the operation of commercial laboratories, is out of the question where atomic energy is concerned, at least as far as one can see ahead.

The third interest is the university. The university, as the traditional trustee of learning and the vigorous defender of free unprejudiced thought, must have a predominant consultative role in any important scientific public enterprise. This was recognized as early as when President Lincoln created the National Academy of Science to advise the federal government in learned matters. The principle has expanded in the use by federal agencies of advisory bodies, largely drawn from university circles. But advisers with this background may be expected to have a tendency to resist the lay demand for quick practical return, in terms of things, for the very practical outlay of large sums of money taxed from the lay public.

SUMMARY

I have tried in this necessarily brief paper to sketch an outline of some of the problems of atomic energy development in the United States. They bear, it seems to me, some similarity to the problems and responsibilities which have been faced by medicine for many years. They have been solved by medicine by a professional acceptance by its members of an obligation to public service. The recognition of this sort of obligation establishes an important and timely precedent. It is one which was invoked successfully for science as a whole during the war, and it must become the touchstone of obligation for citizenship on the part of gifted persons in the era of atomic peace.

MEDICAL PROGRAM OF THE ATOMIC ENERGY COMMISSION

SHIELDS WARREN, M.D.
Boston

In this symposium, you have heard varying aspects of the relations of atomic energy to the field of medical science. The advent of atomic energy, as you can well see from the foregoing presentations, has had its impact not only on the political structure of the world but on its scientific and medical makeup as well.

You and your fellow citizens have given the Atomic Energy Commission the responsibility of insuring that the best possible use of this new source of energy will be made, consistent with the national security.

The last six years have seen more profound changes in scientific medicine than any period since the discovery of bacteria or the invention of the microscope. The changes have been brought about by many factors: the wholesale uprooting incident to the war, the development of antibiotics, the impact of social legislation and, above all, the advent of atomic energy. When we consider that before the war scattered persons received localized radiation in the hospitals and in physicians' offices, whereas hundreds of thousands were killed or exposed to ionizing radiations at Hiroshima and Nagasaki; when we think that six years ago the average man had no more concern with ionizing radiation than as a means of checking on an aching tooth or determining the cause of chronic cough, whereas today millions of persons live within the shadow of possible wartime exposure to ionizing radiation from the atomic bomb, and when we realize that six years ago it would be a skilled chemist who could detect after hours of work a millionth of a gram of phosphorus and now a technician with a Geiger counter can detect a fraction of a millionth of a gram of radioisotopic phosphorus in a few minutes, we realize how long a road we have come in this short span.

As a result of the atomic bomb in Japan, the Bikini test and the lowering clouds of war, it is natural that we think of atomic energy in terms of mass destruction, mass destruction cheaper and more efficient than any other then envisaged. However, like the old coin with the eagle and clutched arrows on one side and the head of Liberty on the other, this picture of atomic energy has a fair and forward-looking obverse. What atomic energy may bring about in the way of development of power and of heat, what it may do in the propulsion of ships or aircraft remains all but hidden in the mists of the future. What it means as a provider of research tools is at present as overwhelming as a streamliner rushing down on a grade crossing.

EXTERNAL RADIATION AND INTERNAL RADIATION

In any consideration of radiation, it is important to remember that ionizing radiation may affect the body in two ways: first, as external radiation, as from the

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Read in a symposium on Atomic Energy in the General Scientific Meetings at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 22, 1948.

conventional x-ray tube, and, second, as internal radiation, as from the administration of radioactive phosphorus.

The various ionizing radiations affect cells qualitatively in similar fashion. There is no way that one can tell by examination of a cell or tissue whether the radiation effect seen has been produced by neutrons, by 200 kilovolt roentgen rays or by the gamma rays of radium. The predominating effect is assumed to be through interference with the nucleic acid metabolism of the cell. External radiation, in passing through the body, has an almost equal chance of being absorbed by the various cells with which it comes in contact. The quantitative variation that these cells show in response hinges chiefly on their inherent sensitivity to irradiation. In internal radiation, on the other hand, because of the specific affinity of certain tissues for specific elements, as, for example, bone and phosphorus, or thyroids and iodine, and because of the relatively short range of many of the types of radiation emitted by the various isotopes, there can be some degree of selective localized radiation.

RADIOACTIVE ISOTOPE THERAPY

In radioactive isotope therapy there is an attempt to take advantage of these selective localizations. In determining the therapeutic value of any radioactive isotope, there are several factors to be taken into consideration: first, the inherent toxicity of the substance itself—thus, strontium, which might be useful because of its high toxicity to bone marrow. Second, the half-life of the material: material which has a long half-life is much more dangerous from the standpoint of possible excessive radiation than one with a short half-life. On the other hand, problems of shipment and preparation of the material for administration demand a certain amount of time, and material with too short half-life would not be satisfactory. Third, the degree of localization; for example, radioactive sodium is relatively limited in use because of the high degree of diffusibility of the sodium ion. Fourth, range and type of radiation which tend to limit the region effectively irradiated to the vicinity of localization. Fifth, the element must be such that its specific activity can be reasonably high, preferably in the order of 1 millicurie per milligram of element. Thus, radioactive calcium with a half-life of forty-five days might be a fairly suitable material from the therapeutic standpoint; however, the specific activity of calcium is relatively low and, consequently, it is difficult to get an effective concentration of the isotope at a desired point. There are relatively few substances that fulfil all these desirable criteria.

There is also an important set of variables from the standpoint of the lesion to be treated. First, the lesion must be one that may be satisfactorily treated by ionizing radiation, that is, its cells must be responsive to radiation; second, there must be a fair differential between the sensitivity of the abnormal and the normal cell of the part.

In the light of these limitations, it is not surprising that only a few isotopes among those thus far tried have been useful from the standpoint of treatment. These are radioactive phosphorus in the case of polycythemia vera, and some leukemias; iodine^{131} in rare carcinomas of the thyroid and gold^{189} in some malignant processes in which either direct injection into the tumor is utilized or the selective uptake of colloidal substance by the reticuloendothelium system is of value.

MEDICAL PROGRAM

The medical program of the Atomic Energy Commission may be divided into four parts: First, the maintenance of health of the workers of the commission and its contractors. Thus far, the health and safety record is an enviable one, and speaks highly for the foresight of those who set the initial standards of safety and permissible dose levels for exposure to ionizing radiation. Second, the protection of environmental health. This involves such problems as waste disposal, possible contamination of surrounding areas and the like. Third, the development of basic research in those problems peculiarly related to atomic energy, of which the effect of ionizing radiation on the plant, animal and human cell, both isolated and aggregated into organisms, must be determined. Such problems as permissible dose levels of ionizing radiation, metabolism of new or rare elements, the mechanism of radiation injury, the development of treatment for such injury and the character and mode of development of hereditary changes due to ionizing radiation are among those of basic importance. Fourth, the exploration of what, if any, values the new sources of energy available at the installations of the Atomic Energy Commission themselves and the value that very short-lived radioactive isotopes may have in cancer research and cancer therapy.

An important aspect of the cancer research program is the free provision of the isotopes thus far established as most definitely of value, namely, phosphorus^{32}, iodine^{131} and soduim^{24}, for cancer research and cancer therapy. It is hoped that this list may later be enlarged to cover other important materials. Cobalt^{60} is receiving careful consideration at the present time. It is of special interest, owing to the fact that the gamma radiations from cobalt are essentially the same as those from radium, since cobalt has a moderately long half-life of five and three-tenths years, and, since it is nontoxic as an element, its use offers certain definite advantages. Of particular importance is the fact that it is not an alpha particle emitter and is not stored indefinitely in bone, as in the case of radium and radon.

Finally, since no program can hope to be better than the personnel by which it is being implemented, training plays a very important part. To this end and to compensate partly for the dirth of scientific personnel due to the war, a fellowship training program is being developed in the medical and allied sciences. This training program, administered by the National Research Council for the Atomic Energy Commission, provides up to one hundred predoctoral fellowships annually and seventy-five postdoctoral fellowships annually in the life sciences.

The predoctoral fellowships are one year in duration and are renewable. The postdoctoral fellowships have a term of two years and are not renewable. The greatest latitude compatible with sound training will be offered the fellow in obtaining his training, whether in the installations of the Atomic Energy Commission or whether in a university or a hospital. One feature of the predoctoral fellowships is their availability to medical students who may desire to interrupt their training, particularly at the end of the second year, for a year of fundamental research in this new field.

Council on Physical Medicine

REPORTS OF THE COUNCIL

The Council on Physical Medicine has authorized publication of the following reports. HOWARD A. CARTER, *Secretary.*

PRESS-AIRE PRESSURE AND VACUUM PUMP ACCEPTABLE

Manufacturer: Press-Aire Products, 909 E. Willetta, Phoenix, Ariz.

Press-Aire Pressure and Vacuum Pump.

The Press-Aire Pressure and Vacuum Pump is a device designed to furnish relatively small positive or negative pressures such as might be used clinically for aerosol therapy. It takes up space amounting to 16.5 by 11 by 17 cm. (6½ by 4¼ by 6¾ inches) and weighs 3.9 Kg. (8½ pounds). The shipping weight is 4.1 Kg. (9 pounds). It draws 132 watts (1.2 amperes) on a 110 volt 60 cycle alternating current.

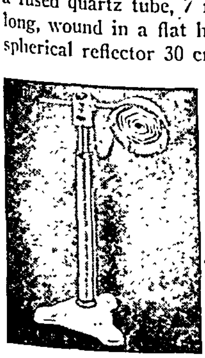
The descriptive folder states that the pump can furnish a maximum air pressure of 15 pounds (per square inch, equal to 775 mm. of mercury). This claim was verified in a laboratory acceptable to the Council, where the pump gave more than 789 mm. The folder similarly claims a maximum vacuum of 16 inches (presumably inches of mercury, equal to —406 mm.). This claim was also verified by the laboratory, where the pump gave —439 mm. of mercury.

The Council on Physical Medicine voted to include the Press-Aire Pressure and Vacuum Pump in its list of accepted devices.

LIFE LITE COLD QUARTZ ULTRAVIOLET LAMP, MODEL R-6, ACCEPTABLE

Manufacturer: Ultra Violet Products, Inc., 5205 Santa Monica Blvd., Los Angeles 27.

This ultraviolet generator is of the high potential, low vapor pressure, "cold quartz," mercury arc type. The burner, which is a fused quartz tube, 7 mm. in diameter, about 180 cm. (6 feet) long, wound in a flat hexagonal spiral, is supported in a hemispherical reflector 30 cm. (12 inches) in diameter.



Life Lite Cold Quartz Ultraviolet Lamp, Model R-6.

The reflector is supported on the end of an arm that is free to travel horizontally and rotate about the axis of the arm. This arm is mounted on a vertical telescoping column that is adjustable in height from 75 cm. to 132.5 cm. (30 to 53 inches). The vertical column is attached to a substantial base that houses the high voltage transformer.

The lamp operates on 110 to 130 volts, with an average power consumption of about 35 watts. The exposures are timed by an automatic clock-controlled switch.

Mechanical, electrical, radiometric and physiologic tests on this lamp indicated that about 90 per cent of the biologically effective ultraviolet radiation of wavelengths 3,132 angstroms, and shorter was in the wave band centering about 2,537 angstroms, and that at the standard distance of 61 cm. (24 inches) from the plane of the rim of the reflector on 120 volts (38 watts) the intensity was close to 750 microwatts per square centimeter. This is about twenty times the minimum intensity specified in the published statement of requirements for Council acceptance of such lamps, which stipulates an exposure of 45 seconds for a minimum perceptible erythema.

The Council on Physical Medicine voted to include the Life Lite Cold Quartz Ultraviolet Lamp, Model R-6, in its list of accepted devices.

MICROTONE AUDIOMATIC T-3 HEARING AID ACCEPTABLE

Manufacturer: The Microtone Company, 4602 Nicollet Avenue, Minneapolis 9.

The Microtone Audiomatic T-3 is a battery-contained hearing aid. The white plastic case contains the microphone, amplifier and batteries. The outside dimensions are 122 by 62 by 24 mm. ($4\frac{13}{16}$ by $2\frac{7}{16}$ by $\frac{15}{16}$ inch) exclusive of the clip and the attachment of the cord to the receiver. The A battery and the 30 volt B battery are both of the zinc-carbon type. The A battery drain is 60 milliamperes and the B battery drain is approximately 0.55 milliampere.

Microtone Audiomatic T-3 Hearing Aid.

The instrument is of sturdy construction. The following results were obtained in a performance test:

Subject	Acoustic Gain	Articulation Scores Microtone	 Reference
A	Not Observed	80%	80%
B	Not Observed	75%	77%
C	46 db.	Not Observed	
D	49 db.	Not Observed	

The Council on Physical Medicine voted to include the Microtone Audiomatic T-3 Hearing Aid in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PENICILLIN (See New and Nonofficial Remedies 1947, p. 144).

The following additional dosage forms have been accepted:

PREMO PHARMACEUTICAL LABS., INC., SOUTH HACKENSACK, N. J.

Tablets Crystalline Penicillin G Potassium (Buffered): 50,000 and 100,000 units. Buffered with calcium carbonate 0.25 Gm.

Troches Crystalline Penicillin G Potassium: 5,000 units.

PROPYLTHIOURACIL (See THE JOURNAL, Oct. 9, 1948, p. 429).

The following dosage form has been accepted:

ELI LILLY & CO., INDIANAPOLIS

Tablets Propylthiouracil: 50 mg.

DIGITOXIN-U.S.P. (See New and Nonofficial Remedies 1947, p. 249).

The following dosage form has been accepted:

THE WM. S. MERRELL CO., CINCINNATI 15

Tablets Unidigen: 0.1 Gm.

STREPTOMYCIN (See New and Nonofficial Remedies 1947, p. 150).

The following additional dosage form has been accepted:

PREMO PHARMACEUTICAL LABS., INC., SOUTH HACKENSACK, N. J.

Streptomycin Sulfate: Vials containing streptomycin sulfate equivalent in activity to 1 Gm. of streptomycin base.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

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SATURDAY, DECEMBER 25, 1948

THE ASSESSMENT AND PUBLIC OPINION

Chief among the subjects discussed by doctors since the interim session of the House of Delegates in St. Louis has been the assessment of twenty-five dollars per member voted at that session. Few indeed are adverse comments from members of the medical profession. Most physicians who have expressed their views feel that they want to participate fully in the campaign of education that will be financed by these funds. Some few physicians have said that they do not favor the assessment.

Opposition to the point of view of the medical profession of long standing, such as that from the Committee on the Nation's Health, Senator Murray, Congressman Dingell and the so-called Committee of Physicians for the Improvement of Medical Care, Inc., might have been anticipated; they are merely running true to form; their strength is but little either in numbers or in medical support. From many of the state medical societies has come enthusiastic official endorsement of the action taken by the House of Delegates; this has been most heartening to those who will have the burden of determining the actions to be taken.

One state has circularized the official bodies of the Association, including many of the delegates, with its concept of the form that the program should take. In addition, literally hundreds of advertising agencies, purveyors of radio time, public relations counsels, experts in propaganda, motion picture producers, publishers and similar groups have besieged the headquarters of the Association with proposals which might utilize a considerable share of the funds when they become available. It would be inconsistent with the status, the prestige and the tradition of the American Medical Association to approach this problem in a confused or disorderly manner. The procedure since the House of Delegates passed the resolution endorsing the assessment has been strictly according to proper organizational action. The Board of Trustees announced to the House of Delegates the establishment of a special committee to be known as the Coordinating Committee for the Protection of the People's Health, composed of members of the Board of Trustees and of the House of Delegates; on this committee will rest the responsibility for ultimate decisions. The executive committee of that group employed the firm of Whitaker and Baxter of California as special public relations counsel. This firm had previously acted as counsel for the California Medical Association in its presentation of the point of view of the medical profession in relation to compulsory sickness insurance in California. At present Whitaker and Baxter are developing a comprehensive program of education, which will be submitted to the entire Coordinating Committee at its second meeting on January 8.

The American people have not as yet heard specifically of the purpose for which the funds will be used. Again, as might have been anticipated, some newspapers referred to the assessment as "war chest," others as a "slush fund," even more as the basis for a vast lobby. None of these appellations is justified. As was directed by the House of Delegates, the special fund will be employed to educate the American people as to the nature of medical practice in the United States, as to the services rendered by the medical profession and as to the program of the American Medical Association for extending medical research and medical care. No doubt all the usual mediums of public education will be utilized. Emphasis will be placed on the ideals of the American medical profession. Certainly the American people should know that compulsory sickness insurance is not a technic for providing free medical care to all of the people but instead a system whereby the workers of the nation are taxed to support a vast bureaucracy which itself will distribute medical care and which will be the intervening agency between the sick and the medical, hospital, pharmaceutical, nursing and allied professions. An educational campaign of the scope contemplated will reach to the very grass roots of the nation. Every physician and every medical organization can aid in this educational project by further interpretation and education of patients and public groups.

As might also have been expected, because the campaign against compulsory sickness insurance has been going on since 1916, many a medium of public information, many an official of county, state and national government, many a leader of industry, finance, transportation and banking has rallied to the cause of the medical profession. Innumerable offers have come to the headquarters of the Association of space in periodicals and in the press, time on the radio and similar facilities for the campaign of extension of knowledge to the people. Many organizations allied to medicine have indicated their firm support of the program of the medical profession and have offered to participate with funds, with speakers and with their other facilities. In view of this situation leaders of the medical profession in the individual states need not be overcome by apprehension or fear. They need only to recognize the necessity for such leadership as the Coordinating Committee must provide. They should recognize the desirability of a well coordinated program under such leadership rather than a state of confusion with innumerable leaders widely scattered throughout the country and out of intimate contact with the central organization.

In the time that has elapsed since the House of Delegates met, certain members of the established opposition have been, as usual, expressing their points of view wherever they could gain an audience. The Committee on the Nation's Health, under the presidency of Channing Frothingham, has issued several bulletins. The Committee of Physicians for the Improvement of Medical Care, Inc., has sent out its Statement No. 25. These thirty-five physicians do not choose to agree with many of the actions of the representative body of American medicine.

Mr. Ewing, Federal Security Administrator, has, for reasons known only to himself, taken to the hustings; he has appeared on several radio programs, forums and platforms in promotion of compulsory sickness insurance. Some physicians have thought that the American Medical Association, through its president and secretary, ought to be answering every one of the statements that have been issued by the people already mentioned and also by Senator Murray, Congressman Dingell and others.

The St. Louis *Globe-Democrat* has directed a pointed inquiry at these activities on the part of Mr. Ewing. A few paragraphs are worthy of quotation:

> Ewing, who presumably is hired solely to administer the Social Security set-up as dictated by present laws, has gone all-out on a lobbying expedition against the lobbying plans of the A. M. A. against socialized medicine. Though ethics would seem to decree that he stick to his legal chores, he is feverishly denouncing A. M. A.'s "frantic taxation of members to finance the greatest lobbying effort in history." Curiously, he is condemning others for the kind of congressional pressure for which his and federal social reform departments have long been noted. It is all very confusing. Bureaus, it now seems, are supposed to tell Congress what to do; not be content merely to carry out the laws it passed.
>
> As an individual he has, of course, the right of free speech, but when he says categorically that President Truman's election gave socialized medicine the green light, he ought to state it merely as an opinion and not as a fact to excuse his wild haymakers.
>
> This appears to be the beginning of a gigantic compulsory health insurance campaign which Ewing is reported "coordinating." Rumors say the attacks will accuse doctors of charging outrageous fees the average citizen cannot afford, of shuttling him expensively back and forth between specialists, of supervising medical education in such a way as to insure a continued shortage of physicians, and of failing to attempt to remedy the poor distribution of medical talent over the nation.
>
> But won't such a campaign be expensive? If so, whose slush fund is Ewing co-ordinating? Or will the work be done by regular FSA and Public Health Service employes whose salaries are paid by taxpayers who oppose as well as favor socialized medicine.

In the same editorial the *Globe-Democrat* recognizes the right of the American Medical Association to assemble any sum it may wish to assemble to battle the Ewing program, but it also points out that perhaps a goodly portion of funds might be used to "hunt ways to remedy the conditions Ewing and others properly decry." The *Globe-Democrat* may be assured that a definite portion of the effort of the American Medical Association at this time is designed to develop exactly such remedies.

This then is the present status of the assessment and of public opinion concerning it. The medical profession of the nation should recognize that there is no panic, no fear, no doubt in the minds of the leadership of the American Medical Association. The Coordinating Committee is proceeding in an orderly, scientific manner to do the task assigned to it by the House of Delegates.

GLUTAMIC ACID AND INTELLIGENCE

Experimental studies during the past twelve years have suggested that glutamic acid may bear some unique relation to the normal functioning of the brain. In 1936, the English worker Weil-Malherbe[1] demonstrated that slices of the gray matter of rat and guinea pig brain will oxidize *l*-glutamic acid, the naturally occurring form, but would not oxidize the *d*-form, or any of twelve other amino acids studied. This investigation suggested that glutamic acid played some important part in brain metabolism, perhaps in the utilization of carbohydrate for energy. More recently it has been observed[2] that *l*-glutamic acid increases formation of acetylcholine in extracts of rat brain, and still others have found that *l*-glutamic acid administered to rats enhances their ability to learn a simple maze[3] and a somewhat more complicated problem box.[4]

Studies on the possible effect of glutamic acid in human subjects with various types of dysfunction of the brain have logically followed the foregoing suggestive experimental observations. That glutamic acid exerts a favorable effect in decreasing the frequency of petit mal seizures in epileptic patients now appears to be fairly well established,[5] and the effect is claimed to be due to some other factor than an alteration of acid-base balance.[6] Another unexpected observation in the epileptic patients was an increased mental alertness,[5] a result which is in general accord with those obtained in experimental animals as mentioned.[7] A further logical extension of the problem was, therefore, to study the effect of glutamic acid on the intelligence of mentally retarded human subjects. Two such recent studies[8] have indicated some favorable response; using standard psychologic tests as criteria, these investigators have observed a rise in "mental age" and intelligence quo-

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[1] Weil-Malherbe, H.: Biochem. J. **30**: 665, 1936.
[2] Nachmansohn, D.; John, H. M., and Waelsch, H.: J. Biol. Chem. **150**: 485, 1943.
[3] Zimmerman, F. T., and Ross, S.: Arch. Neurol. & Psychiat. **51**: 446, 1944.
[4] Albert, K. E., and Warden, C. J.: Science **100**: 476, 1944.
[5] Price, J. C.; Waelsch, H., and Putnam, T. J.: J. A. M. A. **122**: 1153, 1943.
[6] Waelsch, H., and Price, J. C.: Arch. Neurol. & Psychiat. **51**: 393, 1944.
[7] Zimmerman and Ross.[3] Albert and Warden.[4]
[8] Albert, K. E.: Hoch, P., and Waelsch, H.: J. Nerv. & Ment. Dis. **104**: 263, 1946. Zimmerman, F. T.; Burgemeister, B. B., and Putnam, T. J.: Am. J. Psychiat. **104**: 593, 1948.

tient in the patients and a general improvement in mental functioning. The improvement was not restricted to any one segment of intelligence and personality; it was greatest within six months of beginning therapy and diminished after that. The "ceiling effect" appeared after one year of treatment.

Although current work[9] challenges the earlier claim that glutamic acid improves learning in the rat, further careful studies of this question are clearly warranted. Any therapeutic measure which offers even a glimmer of promise in conditions heretofore as apparently hopeless as these mental deviations merits full and objective consideration.

Current Comment

NEW HEALTH REGULATIONS FOR IMMIGRANTS

The workings of the legal mind are frequently difficult for the scientific mind to understand. According to a recent report, an alien arriving in the United States who wishes to become a permanent resident must provide evidence of freedom from venereal disease in the form of a certificate signed by a physician and a roentgenogram of the chest to indicate freedom from tuberculosis. The new rules do not apply to aliens who come for visits or for business reasons and who may stay as long as six months. In the case of war brides, they must be admitted even if they have venereal disease and/or tuberculosis, and local health officers in the areas to which they go are notified of their condition. Everyone arriving in the United States, including United States citizens returning from abroad, must have a certificate showing a recent vaccination against smallpox. Apparently casual visitors may spread their diseases at random. This should be a big help to the cause of good health.

PSYCHIATRIC REHABILITATION OF SELECTEES

The New York City Committee on Mental Hygiene[1] recently studied the extent and nature of psychiatric problems among men in New York city excluded from military service for neuropsychiatric disabilities. They proposed to determine the severity of handicapping, the numbers needing psychiatric help, the kinds of psychiatric help needed and the possibilities of reducing the gap between present needs and present resources for psychiatric aid. The study was made by interviewing 314 men rejected and 309 men discharged for neuropsychiatric disabilities. These were selected from ten selective service boards. Ten categories of disturbance were studied. However, the large majority of cases fell within the first two groups, viz., psychoneuroses and inadequate psychopathic personality. Among other interesting facts developed in the study, it was discovered that many of the men demonstrated to need psychiatric aid refused treatment because of the fear and scorn popularly associated with psychiatric disorders. The mention of psychiatry still suggests to most persons the "frightening implications of insanity and lunatic asylums." Interview responses from patients needing treatment contained rubber stamp phrases such as "nut doctor" for psychiatrists, and "Don't tell me I'm loco," and "I'm not wacky." Many patients during the course of the interview expressed great relief at the assurance that they were not "crazy" or "slaphappy" and subsequently agreed to undertake extended treatment. Many who were unwilling to admit the psychiatric nature of their complaints were willing to take medical treatment but not psychiatric treatment. The gap revealed between numbers of dischargees needing psychiatric help and those who would accept it was painfully large. However, the gap between those who needed help and those receiving it was much greater. Of those who needed help, only 26 per cent were willing to accept it and only 5 per cent were actually receiving psychiatric aid. Furthermore, 61 per cent of the men who need and want psychotherapy require free service and the remaining 39 per cent, with but few exceptions, could pay for only low cost care. The authors concluded that greatly increased budgets and staffs will be imperative for supplying even partially adequate service. However, given the necessary insight, training, determination and recognition of what is required, much can be done even under present limitations.

STANDARD NOMENCLATURE OF DISEASE

Many recent inquiries from hospitals and persons interested in disease classification have indicated that confusion has arisen in relation to the purposes of the new "Manual of International Classification of Diseases, Injuries, and the Causes of Death" and the "Standard Nomenclature of Disease." These books serve two distinct purposes, which do not overlap or conflict. The International statistical classification is published under the auspices of the World Health Organization. The main purpose of this classification is to establish international standards for coding diseases and carrying out large scale statistical studies. The diagnostic breakdown is much less specific than that of the "Standard Nomenclature of Disease." "The Standard Nomenclature of Disease and Standard Nomenclature of Operations" is published for the American Medical Association. This book standardizes and codes individual specific diagnoses designed for hospital filing and reference work. The diagnostic breakdown in the "Standard Nomenclature" is much greater than that of the International classification. At present the "Standard Nomenclature of Disease and Standard Nomenclature of Operations" is undergoing revision, and it is expected that the new volume will be published early in 1950. The new volume will also contain code numbers of the "International Classification" (parenthetically) for cross reference use in statistical studies.

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[9] Stellar, E., and McElroy, W. D.: Science, **108**: 281, 1948.

[1] Psychiatric Needs in Rehabilitation: A Study by the New York City Committee on Mental Hygiene of the State Charities Aid Association, New York, 1948.

ORGANIZATION SECTION

Proceedings of the St. Louis Interim Session

MINUTES OF THE INTERIM SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN ST. LOUIS, NOVEMBER 30-DECEMBER 1, 1948

HOUSE OF DELEGATES

Second Meeting—Wednesday Afternoon December 1

The House of Delegates was called to order at 1:30 p. m. by the Speaker, Dr. F. F. Borzell.

Report of Reference Committee on Credentials

Dr. H. B. Everett, Chairman, stated that 173 delegates had been seated and that a quorum was present, and the Speaker announced that the House would proceed with its business.

Presentation of Minutes

It was moved by Dr. John W. Cline, California, seconded by several and carried, that the adoption of the minutes be deferred.

Executive Session—Wednesday Afternoon

On motion of Dr. Mather Pfeiffenberger, Illinois, regularly seconded and carried, the House went into Executive Session at 1:35 p. m.

Report of Reference Committee on Executive Session

Dr. J. Stanley Kenney, Chairman, presented the following report, which was adopted:

Your reference committee has given careful consideration to the following Resolution on Voluntary Participation in Government Plans introduced by Dr. Samuel J. McClendon, California:

WHEREAS, compulsory governmental medical insurance would (1) lower the quality of medical care, (2) substantially increase its cost, (3) create an administrative political bureaucracy, (4) weaken personal responsibility, (5) weaken local public responsibility, (6) fail to satisfy the demands for better medical care at lower cost, (7) waste and demoralize professional personnel, (8) fail to improve the quality or increase the number of professional personnel, (9) destroy voluntary plans for the provision of medical care, (10) most certainly ruin the most efficient, effective, progressive and sound system of medical practice—the American private practice of medicine—yet devised in the history of mankind; and

WHEREAS, The enactment of compulsory governmental medical insurance legislation is favored by the political party currently in power in the executive and legislative branches of the federal government of the United States of America; and

WHEREAS, Enactment of compulsory governmental medical insurance legislation by the 81st Congress of the United States of America may be imminent; and

WHEREAS, The Constitution of the United States of America guarantees the right of any physician to eschew personal participation in any scheme of compulsory governmental medical insurance; and

WHEREAS, All physicians are morally and professionally bound to hold the welfare of the patient paramount to all other consideration; and

WHEREAS, Compulsory governmental medical insurance is not consistent with the best interests of the patient; and

WHEREAS, Compulsory governmental medical insurance is the keystone of the arch of state socialism; be it then solemnly

Resolved, (1) That voluntary participation in any form of compulsory governmental medical insurance by any member of the American Medical Association shall be deemed an act unworthy of the noble heritage of our profession, an act against the concepts of individual freedom, personal responsibility and free enterprise, an act against the best interest of the patient and an act deserving of the strongest condemnation and censure by the American Medical Association and its membership;

(2) That personal honor, integrity and moral considerations render it impossible for any physician to participate voluntarily in compulsory governmental medical insurance; and

(3) That this House of Delegates make a statement of policy to all members of the American Medical Association with a request that written endorsement of this policy be obtained for all individual members of the medical profession.

No one appeared to discuss this resolution and it is the unanimous opinion of your reference committee that this resolution be disapproved.

Respectfully submitted,

J. STANLEY KENNEY, Chairman.
JESSE D. HAMER.
CLAUDE R. KEYPORT.
ERLING W. HANSEN.
WALTER G. PHIPPEN.

On motion of Dr. Kenney, seconded by several and carried, the report of the reference committee was adopted as a whole.

Wednesday Afternoon—Continued

On motion of Dr. H. P. Ramsey, District of Columbia, seconded by several and carried, the House rose from Executive Session at 1:40 p. m., to meet immediately in general session, Dr. F. F. Borzell, Speaker, presiding.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Floyd S. Winslow, Chairman, presented the following report, which was adopted on motion of Dr. Winslow, duly seconded and carried after the Speaker declared that its adoption constituted an amendment to the By-Laws:

Your committee has carefully considered the three resolutions presented regarding changes in the Constitution and By-Laws concerning the Executive Session.

After hearing all sides of the question, your committee recommends the adoption of the report presented by the delegation from Pennsylvania, amended so that Division Three, Chapter IX, Sec. 3 (4) shall read: "The House of Delegates, in any session, by a two-thirds vote, may extend an invitation to address the House of Delegates to any individual who, in its judgment, might assist in its deliberation."

Respectfully submitted,

FLOYD S. WINSLOW, Chairman.
JAMES P. WALL.
VAL H. FUCHS.
DONALD CASS.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Creighton Barker, Chairman, presented the following report, which was adopted section by section and as a whole, on motions of Dr. Barker, duly seconded and carried:

REPORT OF THE SECRETARY

The reference committee views with satisfaction the statement in the Report of the Secretary concerning the increase in membership in the Association. During the past nine months this increase has been substantial—2,053 Fellows and 4,258 members.

The reference committee also notes, and wishes to emphasize to the House of Delegates, the increased field activity of the Secretary, and, although it realizes the time and effort that these field trips take, it is confident that these visits bring the membership of the constituent associations much closer to Association headquarters.

All matters placed before the House of Delegates at its annual session in June have been referred to the proper agencies as directed by the House.

The committee wishes to compliment Dr. Lull on the active and vigorous conduct of the Office of Secretary and General Manager.

REPORT OF THE BOARD OF TRUSTEES

1. Finances: The reference committee wishes to direct the attention of the House to the financial statement of the Association and increased cost of the Association's operations. It is certain that these costs will increase, and your reference committee hopes that the House in this session will take appropriate action to provide generous financial support for the projects in which the Association is now engaged and for additional activities.

2. The Journal and Other Publications: All of the publications of the Association have prospered and extended their usefulness. The Journal continues to be the outstanding medical periodical in the world and Hygeia the most important agency of lay information in matters of health. The circulation of Hygeia is now 225,000 copies a month, nearly double that of three years ago.

The reference committee is in full agreement with that section of the report on The Journal which suggests a special publication to be devoted largely to the social, economic and industrial aspects of medicine, and your committee hopes that this may be established without delay.

3. World Medical Association: American medicine has a grave responsibility in the continued development of the World Medical Association; our participation in it is imperative to its success.

There is confusion in the minds of many concerning the World Medical Association and the World Health Organization. The World Health Organization is an official assembly of governmental agencies and is the health section of the United Nations. The World Medical Association is a voluntary association of representatives of medical organizations throughout the world. It has a great potential in bringing physicians from everywhere together and affords opportunity for discussion of mutual problems and development of mutual strength.

The reference committee wishes to encourage the Board of Trustees in this project.

4. The Mission to Japan: The reference committee wishes to call particular attention to the important mission to Japan carried out by five members of the Board of Trustees at the request of General MacArthur. It is a significant evidence of the esteem in which American medicine is held.

5. National Health Assembly: The reference committee wishes to commend the Board of Trustees for the action taken in relation to the National Health Assembly held in May, providing the opportunity for many informed spokesmen for American Medicine to present our views to the Assembly even though they were finally distorted and/or disregarded in the official reports.

6. Actions of House at June Session; The House of Delegates during its session in June took action on the service of physicians in connection with the draft and on several phases of the operation of the Veterans Administration. These matters are discussed in the report of the Board of Trustees, but no comment will be made on them by your reference committee, since resolutions relating to them are now pending before this House.

7. Reports of Councils and Bureaus of Board: The committee has reviewed the reports of all the bureaus and councils and the laboratory, and it is pleased to state that in its opinion, they are operating efficiently and being of great service.

8. Bureau of Legal Medicine and Legislation and Bureau of Medical Economic Research: Particularly does the committee mention the broad usefulness of the Bureau of Legal Medicine and Legislation and the Bureau of Medical Economic Research. The former has long been an active agency of the Association, and your committee is pleased to see that it continues as such and extends its services. The Bureau of Medical Economic Research is a new enterprise of the Association and has already taken its place as a valuable and unique stimulation to the better understanding of medical economic problems. It is hoped that its publications may have wider distribution among the profession and the public.

9. Board of Trustees: Your committee wishes to express appreciation to the Board of Trustees for its painstaking and time-consuming service to medicine in America, not only for the things embodied in the report presented to this House but also the myriad details which constantly confront it.

SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES

1. Committee on Hospitals and the Practice of Medicine: The Board of Trustees also submitted a supplementary report which was a progress report of the Committee on Hospitals and the Practice of Medicine, under the chairmanship of Dr. Elmer Hess. That committee is charged with the analysis of a delicate question, and your reference committee will not comment at length on its preliminary report. It does, however, wish to urge on the committee the realization that although many of the problems involved must be settled at the local level, the American Medical Association, although it has no actual police power, must establish policies for the guidance of the component societies in all matters related to the practice of medicine.

2. The Future of Medicine in the United States: The reference committee took no action on a supplementary report from the Board of Trustees entitled, "The Future of Medicine in the United States." This report had to do with levying an assessment on constituent associations to finance additional activities of the American Medical Association. The report was referred to the Reference Committee on Legislation and Public Relations, which had received a number of other resolutions dealing with the same subject.

APPRECIATION

And now, Mr. Speaker, I wish to thank my colleagues on the committee for their assistance and those who appeared before the committee for the aid and guidance that we received from them.

Respectfully submitted,

Creighton Barker, Chairman.
Samuel J. McClendon.
Hans H. F. Reese.
Fred H. Muller.
Coursen B. Conklin.

Report of Reference Committee on Sections and Section Work

Dr. Henry S. Ruth, Chairman, presented the following report, which, on motions of Dr. Ruth, duly seconded and carried, was adopted section by section and as a whole:

1. The Reference Committee on Sections and Section Work considered the two items referred to it, namely, the initial and supplementary reports of the Council on Scientific Assembly.

2. The Reference Committee commends and compliments the Council on the unique and well planned scientific program for the present Interim Session.

3. The appointment of officers for the forthcoming first meeting of the Section on Diseases of the Chest and a ruling for the election of their delegate and his alternate were approved, and these officers are welcomed to their new duties.

4. Identical action was voted in respect to the allotment of a session and the appointment of officers for allergy and two sessions for physical medicine in the Section on Miscellaneous Topics at the 1949 Scientific Assembly at Atlantic City, and your committee concurs in the encouragement for the possibility that a session be held once every second or third year on the history of medicine, as coinciding with previous indi-

cations that these portions of the report are consistent with the wishes of the House of Delegates.

5. The Reference Committee approves of the Council's correlation of the assignment of units of sessions for sections with past attendance at the recent section meetings. It took cognizance with praise of the accompanying table in the report showing attendance at recent section meetings. It is in accord with the Council's decision to accede to the wishes of the section secretaries in numbers of sessions granted as far as possible within the limitations of available physical space and other considerations, as well as the Council's objective toward stimulating by this recommendation the formation of continued vital and valuable programs. The committee was impressed with and expressed confidence in the Council's decision in adopting a fluid policy in respect to the number of sessions for each section.

6. The advisability of granting an increase in the membership of the Council from five to seven in number was clearly apparent for reasons adequately expressed; therefore, the Committee approves of such an enlargement and recommends that the indicated change in the By-Laws be presented at the next meeting of this House of Delegates for consideration at that time.

All the above recommendations were unanimously approved by your reference committee.

Respectfully submitted,

Henry S. Ruth, Chairman.
Thomas A. Foster.
Benjamin H. Minchew.
Homer L. Pearson.
Jean P. Pratt.

Report of Reference Committee on Hygiene and Public Health

Dr. Stanley H. Osborn, Chairman, presented the following report, which was adopted section by section and as a whole on motions of Dr. Osborn, duly seconded and carried:

Your Reference Committee on Hygiene and Public Health had three matters referred to it for consideration on the following subjects: (1) Health Units for the Nation, (2) Diabetes Week and (3) The Proposed Definition of "Public Health."

1. Resolutions on Health Units for the Nation: These resolutions were introduced by Dr. Herbert P. Ramsey, District of Columbia, and, with minor changes, have the approval of your committee, to read as follows:

Whereas, No amount of medical care of persons already sick will substantially reduce the incidence of illness; and

Whereas, The traditional position of the American Medical Association has been one of firm support of public health services; in fact, this constitutes a major element of the Ten Point National Health Program of the American Medical Association; and

Whereas, Large numbers of local areas and counties in the United States are not now and never have been covered by adequate sanitary and other public health services; and

Whereas, The Surgeon General of the United States Public Health Service has announced that one of his first major objectives is assistance in development of local health units throughout the nation to meet this fundamental need; and

Whereas, The medical profession has now an opportunity to exert constructive leadership in this matter through the national, constituent state and component county medical societies; therefore be it

Resolved, That the House of Delegates reaffirm its abiding interest in the necessity for the provision of full time modern public health services at the local and community level, including sanitation and all the services usually considered essential for the preservation of the public health; and be it further

Resolved, That the United States Public Health Service be commended for, and encouraged in, its efforts for the further development of local health units for these purposes; and be it finally

Resolved, That the Board of Trustees be commended for its efforts in furthering full time local health units and urged to continue actively all proper procedures to the end that local public health service shall become adequate throughout the nation.

2. Resolutions on Support of Diabetes Week and Resolutions on Diabetes Week and Efforts in Behalf of the Undiscovered and Untreated Diabetic Patient: These resolutions on the subject of "Diabetes Week" have been referred to this committee, which approves these resolutions, with slight modifications, as follows:

Whereas, The medical profession has always recognized its obligations for the discovery, treatment and prevention of diabetes mellitus; and

Whereas, The number of persons with latent and undiscovered diabetes in the United States, according to surveys, is much larger than had been supposed and is estimated to be about 1,000,000 persons; and

Whereas, There exists also a large number of patients whose diabetes is neglected and who are therefore under ineffective or no treatment; and

Whereas, The American Diabetes Association, Inc., whose membership consists of more than a thousand doctors interested in diabetes, has appointed a committee to formulate plans for a national "Diabetes Week," December 6 to 12, 1948; and

Whereas, The purpose of this effort is to assist doctors and local committees in effectively carrying out continuing plans for discovering the unknown diabetic persons and guiding them to their physicians and for spreading widely to the public information about diabetes; and

Whereas, This is to be a doctor's project, of the profession, by the profession and for the public; and

Whereas, To achieve the aims of "Diabetes Week," the American Diabetes Association seeks to enlist the formal support and active cooperation of the medical profession through the American Medical Association and its constituent and component societies; therefore be it

Resolved, That the House of Delegates of the American Medical Association heartily endorse the efforts of the American Diabetes Association in behalf of the undiscovered and untreated diabetic person and approve of the plans for a "Diabetes Week" from December 6-12, 1948.

3. Proposed Definition of "Public Health" from the Report of the Council on Medical Service on Pages 125-126 of the Handbook: Your committee recommends that this definition be amended so that it will be in agreement with the Ten Point National Health Program of the American Medical Association. The following definition has the approval of your committee:

"Public Health" is the art and science of maintaining, protecting and improving the health of the people through organized community efforts. It includes those arrangements whereby the community provides medical services for special groups of persons and is concerned with prevention or control of disease, with persons requiring hospitalization to protect the community and with the medically indigent.

Respectfully submitted,

Stanley H. Osborn, Chairman.
W. Palmer Dearing.
Gerald V. Caughlan.
Karl S. J. Hohlen.
Albert F. R. Andresen.

Report of Reference Committee in Medical Education

Dr. James R. Reuling, Vice Speaker, assumed the Chair.

Dr. George W. Kosmak, Chairman, presented the following report:

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The report of the Council on Medical Education and Hospitals as published in the Handbook constitutes further evidence of the valuable work done by Dr. Herman G. Weiskotten and his associates in this important activity of the American Medical Association. Your reference committee, which has given diligent consideration to this report, desires to make the following comments, considering in their turn the various headings.

1. Financial Support of Medical Educations: This constitutes a topic of great importance to the medical profession. Decreasing income from former sources, increased costs of upkeep and administration, inflation and other factors constitute problems which have stimulated a search for funds from other sources, among them subsidies from the federal government. Naturally, the Council believes that this should be only a last resort and that further attempts should be made to secure the needed support from voluntary agencies. The Council believes that this can be developed through the medium of a national foundation for medical education and meetings have been held with interested lay groups to further the project. The Council believes that such support from voluntary sources in commerce, banking and industry is possible. Your reference committee feels that such activities should be continued and looks forward to the time when definite plans can be presented in future Council reports for action by the Association. It has no comments to offer.

2. Part Time Hospital Inspectors: Your committee commends the procedure adopted by the Council to make more adequate inspection of hospitals designated for intern and resi-

dent training in securing the assistance of part time inspectors for this purpose in various sections of the country. The more frequent appraisal of institutions appears essential to maintain adequate standards.

3. Resident Training and Development of Specialty Boards: In this connection attention might be drawn to the extension of the plan for resident training and the development of the "specialty boards." It is stated that at least one year of an approved rotating internship should be required before a physician can start his specialty training. Practically, this means that young physicians aspire to become residents in limited fields so that they may become eligible for examination by the various specialty boards and do not get enough training in general medicine to make good doctors of medicine. The tendency to specialize appears rather unfortunate in view of the universal desire for more general practitioners. How can this be obtained if we do not provide for the training of the latter and if we stimulate the development of more specialties by the methods now in vogue? In support of the activities of the House of Delegates of the American Medical Association in its attempt to redignify the general practitioner, your reference committee recommends that a reevaluation of basic teaching programs in undergraduate medical schools and of the overemphasis of specialty board certification be made by the Council on Medical Education and Hospitals.

4. Collaboration and Liaison with Other Agencies: The desirability of maintaining relations with other bodies interested in developing standards in teaching and other activities is acknowledged, and it is a satisfaction to note that cooperation is apparently universal. It is recommended, however, that the action of 1934 in refusing representation of two members of the Council on Medical Education and Hospitals as members of the Advisory Board for Medical Specialties be rescinded and that the American Medical Association request that two members of the Council on Medical Education and Hospitals be appointed on that Advisory Board instead of maintaining only the present liaison between the Council on Medical Education and Hospitals and the Advisory Board for Medical Specialties.

5. Summary of Hospitals and Technical Schools: It is of interest to be informed of the large number of institutions which have been under consideration by the Council. Such registration and approval should prove of enormous educational value, together with the regular publications of the Council in The Journal and elsewhere. Attention may be called to the statement that the hospitals approved for intern training call for 9,200 approved internships, whereas it has been stated in the report of a previous committee of this House that only 6,700 persons are available to fill these positions. Therefore, your reference committee believes that if a two year rotating internship could be arranged, the number would be definitely reduced.

6. Association of Interns and Medical Students and the Association of International Medical Students: Among other matters referred to the Council by the House of Delegates, your reference committee noted that the Council was requested to investigate the Association of Interns and Medical Students and the Association of International Medical Students as to facts, tendencies, affiliations and objectives. The Council has this under study, and your reference committee recommends that the matter be subjected to further investigation and that, if feasible, a report be submitted as soon as practicable.

7. Council Activities: To the Council have been assigned many problems in the field for which it was designated, and it has met these with understanding and knowledge. Its activities are therefore of paramount importance and value not only to the medical profession but to the community at large. Your reference committee is pleased to commend the Council highly for its outstanding accomplishments and desires to express gratitude and appreciation for its cooperation in the deliberations of this committee.

Your committee recommends the adoption of the report of the Council on Medical Education and Hospitals and in addition the adoption of the recommendations of the reference committee concerning several of the items in the report of the Council as mentioned.

SUPPLEMENTARY REPORT OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Your reference committee further recommends for approval the revised rules and regulations submitted by the Council on Medical Education and Hospitals in its supplementary report. This supplementary report included a revision of the Council's "Essentials of a Registered Hospital," "Essentials of an Approved Internship" and "Essentials for Approved Residencies and Fellowships." Your committee has suggested three minor alterations in these essentials; namely, in the "Essentials of an Approved Internship" on page 7 the wording "not less than twenty recognized medical journals" be changed to "an adequate number of recognized medical journals." In the Essentials of Approved Residencies and Fellowships" your reference committee recommends the omission of the paragraph on page 7 which reads: "Most residency programs are designed to meet the needs of physicians seeking certification by an American board. Therefore in fields represented by the American boards, the Council seeks to approve only such residencies or fellowships as will be acceptable in whole or in part for admission to the certification examinations." Your reference committee further recommends the deletion of the last paragraph on page 14 referring to the essentials for an approved residency in general practice which reads: "Since residencies of this type are planned to prepare the resident for general practice, they ordinarily do not carry credit towards certification by the specialty boards."

The suggested changes in these reports of the Council on Medical Education and Hospitals are offered for the sake of clarity and should not be interpreted in any way as detracting from the admiration that your reference committee has for the efficiency and excellence of the reports of the Council on Medical Education and Hospitals.

Your reference committee recommends the adoption of the essentials referred to with the modifications cited.

RESOLUTIONS

Resolution on Supplying Doctors for the Armed Forces: This resolution deals primarily with the deferment of medical students until completion of an internship not to exceed two years. Your committee believes that this matter should be given consideration by the Council on National Emergency Medical Service and respectfully suggests that it be referred to that Council.

Resolution on Increase in Number of Students Graduated at Medical Schools in Michigan: Your reference committee believes that the following resolution submitted by Dr. Wyman D. Barrett, Michigan, is based on false premises and is not inclined to give it consideration:

> Whereas, There is general agreement as to the need for a larger number of physicians; and
>
> Whereas, The facilities for teaching are not sufficiently increased to provide hope in the near future of answering the need for a larger number of physicians; and
>
> Whereas, The number of individuals other than Doctors of Medicine licensed to practice the healing art in the State of Michigan has increased materially; therefore be it
>
> *Resolved*, That the Michigan State Medical Society, through its officers, support any reasonable means to increase the number of students graduated from medical schools in this state, and that the delegates to the American Medical Association take similar action at the next meeting of the House of Delegates of the American Medical Association.

Resolutions on Interns: Your reference committee wishes to report that the matter contained in the following Resolutions on Interns submitted by Dr. Joseph F. Londrigan, New Jersey, is now under consideration by the Council on Medical Education and Hospitals and no further report is necessary:

> Whereas, It is increasingly difficult for American Medical Association-approved hospitals to secure interns; and
>
> Whereas, the Association of American Medical Colleges recommends reorganizing the plan of internship to give a two year service with the rotation so arranged as to make possible intensive training in the major divisions of medicine; therefore be it

Resolved, That the period or term of internship be extended to two years, one year rotating and the second year rotating or straight internship; and be it further

Resolved; That the specialty boards give credit for the second year of internship as the equivalent of a junior residency.

Resolution on Federal Subsidization of Medicine: The following Resolution on Federal Subsidization of Medicine has been referred to this reference committee, which believes that the resolution, including the original statement referred to in it, should be referred to the committee on legislation and public relations:

Whereas, the policy of the American Medical Association on federal subsidization of medicine has been clearly defined by its Council on Medical Education and Hospitals; and

Whereas, It is apparent from the recent action taken by an affiliated specialty academy that this policy is not being observed; be it

Resolved, that the American Medical Association, through its Council on Medical Education and Hospitals, reaffirm its statement on this matter and disseminate this statement to the responsible officials of all affiliated organizations and specialty groups.

Respectfully submitted,

George W. Kosmak, Chairman.
Mather Pfeiffenberger.
William Bates.
Louis A. Buie.
Warde B. Allan.

The seven sections of the report of the reference committee dealing with the report of the Council on Medical Education and Hospitals were adopted section by section on motions of Dr. Kosmak, duly seconded and carried.

The report of the reference committee dealing with the Supplementary Report of the Council on Medical Education and Hospitals was adopted on motion of Dr. Kosmak, seconded and carried.

Dr. Kosmak moved adoption of the report of the reference committee referring to the Resolution on Supplying Doctors for the Armed Forces. The motion was seconded by Dr. Walter E. Vest, West Virginia, and discussed by Dr. Vest and by Dr. E. Vincent Askey, California, who moved an amendment that premedical students be considered in this problem as well as medical students, and the motion to amend was seconded by Dr. Vest, and carried. The motion to adopt this section of the report of the reference committee as amended was then carried.

It was moved by Dr. Kosmak, seconded and carried, that the report of the reference committee referring to the Resolution on Increase in Number of Students Graduated at Medical Schools in Michigan be adopted.

Dr. Kosmak moved adoption of the report of the reference committee dealing with the Resolutions on Federal Subsidization of Medical Education. The motion was severally seconded and discussed by Dr. Kosmak, who stated that he did not think the resolutions came within the province of this reference committee. Dr. Samuel J. McClendon, California, moved that the resolutions be acted on immediately, and this motion was duly seconded and carried after the resolutions had been reread.

Dr. T. K. Gruber, Michigan, moved that the resolutions be adopted, and the motion was seconded by Dr. Samuel J. McClendon, California. Dr. C. B. Conklin, District of Columbia, moved an amendment to the motion to strike out that part of the resolutions that refers to a certain academy, and the motion to amend was duly seconded and lost after discussion by Drs. C. B. Conklin, District of Columbia; Samuel J. McClendon and Robertson Ward, California; William D. Stovall, Wisconsin; H. P. Ramsey, District of Columbia; Louis A. Buie, Section on Gastro-Enterology and Proctology; Donald G. Anderson, Secretary of the Council on Medical Education and Hospitals; E. Vincent Askey, California; Morris Fishbein, Editor of The Journal of The American Medical Association, and James R. Reuling, Vice Speaker, and Dr. Kosmak.

The House then carried the motion to adopt the resolutions, which had been duly seconded, after discussion by Drs. E. Vincent Askey, California; Allen H. Bunce, Georgia; Samuel J. McClendon, California; E. H. Cary, Texas, and James R. Reuling, Vice Speaker, and Dr. Kosmak.

On motion of Dr. Kosmak, duly seconded and carried, the report of the reference committee as amended was adopted as a whole.

Report of Reference Committee on Reports of Officers

The Vice Speaker presided.

Dr. James Z. Appel, Chairman, presented the following report:

1. Address of the Speaker: (*a*) Your reference committee wishes to congratulate the Speaker in his efforts to expedite the business of the House of Delegates.

(*b*) Your committee believes, in observing this session, that a few changes might be made which would further facilitate this desire on the part of the Speaker. It would like to suggest that the roll call be so modified that all late comers quietly and while the House is conducting its business report their presence to the Secretary.

(*c*) Further, it believes that it is unnecessary and time consuming to count publicly the ballots of the vote for the General Practitioner's Award and the Distinguished Service Award.

(*d*) In this latter regard it recommends that the qualifications of the three nominees of the Board of Trustees for these two awards be mimeographed and those mimeographed copies be distributed to the Delegates at the time of the nomination. It does not believe that any other sketches of possible nominees should be permitted to be distributed.

(*e*) Your reference committee agrees with the Speaker that there should be some clarification in the By-Laws concerning the Executive Session. It understands that the implementation of this suggestion has been presented and is under consideration of another reference committee. It heartily endorses the idea.

2. Judicial Council: The report of the Judicial Council which appeared in the Handbook, pages 98 to 101 inclusively, met with the approval of your reference committee. It wishes to congratulate the Judicial Council on its expounding the principle that anesthesia is a medical service in contrast to its being a hospital service. It believes that this principle applies to the other specialties generally associated with hospital care as well. It regrets that the Judicial Council must again delay the formulation of a new Principles of Medical Ethics until the report of the Committee on Rebates has been acted on by the House. It can see the wisdom in doing so and can only hope that at the next session the Council will introduce a definite statement on this matter one way or the other. It is the opinion of your reference committee that effort should be made to instil in the members of the American Medical Association the knowledge and the practice of the Principles of Medical Ethics. It believes that the publication of a collection of questions and answers by the Judicial Council will be helpful in this matter. It urges the Judicial Council to take further steps to educate the young doctor and reeducate the older doctor of medicine in these medical ethics. As a suggestion it offers the idea of urging the county medical societies to institute indoctrination courses for all new members, which course would include a thorough understanding of the Principles of Medical Ethics.

Respectfully submitted,

James Z. Appel, Chairman.
J. B. Lukins.
Willis I. Lewis.
Deering G. Smith.
E. Vincent Askey.

Dr. Appel moved adoption of the first paragraph of the report of the reference committee dealing with the Speaker's address, and the motion was seconded. There was discussion by Dr. F. F. Borzell, Speaker; Dr. Appel; Dr. James R. Reuling, Vice Speaker; Dr. G. Henry Mundt, Illinois; Dr. E. Vincent Askey, California, and Dr. E. L. Henderson, Chairman, Board of Trustees, after which Dr. Appel requested deletion of the part of the report referring to having mimeographed copies of qualifications of three nominees for Distinguished Service Award and General Practitioner's Award distributed to members of the House at the time that action is to be taken.

Dr. Appel then moved adoption of the report of the reference committee dealing with the first two paragraphs of the Speaker's Address. The motion was seconded and carried.

Dr. Appel moved adoption of the report of the reference committee contained in the third paragraph dealing with the Report of the Speaker excluding the part deleted. The motion was duly seconded and discussed by Dr. R. W. Fouts, Vice President; the Speaker; the Vice Speaker; Dr. Appel; Dr. G. Henry Mundt, Illinois, and Dr. Thomas M. D'Angelo, New York, who moved that the matter be tabled. The motion was regularly seconded and carried.

It was moved by Dr. Appel, duly seconded and carried, that the portion of the report of the reference committee referring to supplying mimeographed copies of qualifications of nominees for the awards be withdawn.

Dr. Appel moved, and the motion was seconded and carried, that the report of the reference committee dealing with the Report of the Judicial Council be adopted.

On motion of Dr. Appel, regularly seconded and carried, the report of the reference committee with the exception of that part that was deleted and tabled was adopted as a whole.

Report of Reference Committee on Emergency Medical Service

The Speaker resumed the chair.

Dr. Thomas F. Thornton, Chairman, presented the following report, which, on motions of Dr. Thornton, duly seconded and carried was adopted section by section and as a whole:

The deliberations of your reference committee were carried on with the aid and advice of the delegates from the Army, the Navy and the Public Health Service and of members of the *Council on National Emergency Medical Service.* The reports of this Council show a vigorous and continuing activity since the last meeting of the House of Delegates. Your committee feels that this Council should be commended on its fine work in dealing with this urgent problem relating to the use of physicians in our armed forces.

1. Report of Council on National Emergency Medical Service: The Report of the Council on National Emergency Medical Service, printed on pages 70 and 71 in the Handbook, was considered carefully. The committee particularly commends the Council for its emphasis on the need for economy in the use of physicians in the armed forces and for its concern in trying to keep civilian medical personnel adequate for civilian and industrial needs.

2. Statement of Council on National Emergency Medical Service: A statement of the Council on National Emergency Medical Service as printed in The Journal of the American Medical Association on Nov. 20, 1948, page 893, was next considered. The following resolution that was recommended by the council in that statement is recommended by this committee for adoption by the House of Delegates:

Be it Resolved, That in the light of current medical personnel shortages, and in line with the accepted policy for coordination by the armed forces, every effort should be made to consolidate the facilities for the hospital care of the several armed forces; and

Resolved, That the patient load in military hospitals, particularly of nonmilitary patients, be reduced to the minimum consistent with the primary mission of the armed forces as defined by Congressional Acts.

3. Resolutions on Position of Surgeons General: The committee next considered resolutions introduced by Dr. James C. Sargent, Wisconsin, in regard to the position of the Surgeon General of the Army, the Surgeon General of the Navy and the Air Surgeon. After discussion of the resolutions and the problems involved by the committee and others in attendance the committee recommends to the House of Delegates for its adoption the following substitute resolution:

Whereas, The chief medical officers of the Army, Navy and Air Force have a great responsibility in connection with the prevention as well as the treatment of diseases and injuries in members of the armed forces, and the modern unconventional weapons of war have serious medical and health implications both in defense and offense; and

Whereas, The effective execution of the medical mission in peace as well as in war demands that the chief medical officer in the three respective services have a voice in the planning and other activities affecting the health and the treatment of the sick and injured; and

Whereas, The Surgeon General of the Army and the Air Surgeon do not have comparable organizational relationship with their respective Secretaries and Chiefs of Staff as is enjoyed by the Surgeon General of the Navy with the Secretary of the Navy and Chief of Naval Operations; therefore be it

Resolved, That in peace as well as in time of war the Surgeon General of the Army and the Air Surgeon be so placed in the respective organizational set-up of the Army and the Air Force that he is directly under the Chief of Staff of the Army or the Chief of Staff of the Air Force, as the case may be; and be it further

Resolved, That the Surgeon General of the Army and the Air Surgeon have the responsibility directly under the Chief of Staff of the Army and the Chief of Staff of the Air Force respectively in all matters pertaining to health, hospitalization, evacuation, sanitation and research in their respective services; and be it further

Resolved, That a copy of these resolutions be sent to the President of the United States, the Secretaries of National Defense—Army, Navy and Air—and the members of the Committee on Armed Services of both the Senate and the House of Representatives.

4. Recommendation of Appointment of Civilian Medical Advisory Board: The Council on National Emergency Medical Service had recommended to the Secretary of Defense, Hon. James Forrestal, the appointment of a Civilian Medical Advisory Board to act in an advisory capacity with the Secretary of Defense on problems of the armed forces in the field of medicine. Dr. Sargent has received a telegram from the Secretary of Defense dated Nov. 29, 1948, reading as follows:

"Reference your telegrams of twenty four November Nineteen Forty-Eight concerning Medical Advisory Committee, on 9 November I approved a Charter for such committee, copies of which are in the hands of Admiral Boone. In addition, invitations for civilian membership have been issued to a number of eminent medical and allied professional individuals. Announcement of the formation and membership of this committee is being held up pending receipt of all acceptances to membership invitation. Greatly appreciate continued interest and support of you and the members of your Committee."

5. Armed Forces Medical Advisory Committee: Your reference committee also received a copy of the Charter issued by the Secretary of Defense, Hon. James Forrestal, establishing the "Armed Forces Medical Advisory Committee" and outlining the organization and functions of this committee. A copy of this charter is attached to this report.

6. Supplementary Report of Council on National Emergency Medical Service: The committee next considered the supplementary report of the Council on National Emergency Medical Service dated Nov. 29, 1948, introduced by Dr. E. L. Henderson, Chairman, Board of Trustees. This report includes four recommendations on policy. Your committee recommends adoption of the recommendations, to read as follows:

(*a*) It is recommended by the Council on National Emergency Medical Service to the House of Delegates that the American Medical Association favors the call-up and commissioning of the number of physicians in this age group already registered under the Selective Service Act of 1948 that are required by the armed forces to accomplish their primary mission of the defense of our country.

(*b*) The Council further recommends to the House of Delegates that it reaffirm its support of the democratic principles of our country and in so doing object to any special legislation which directly or indirectly singles out the medical profession for registration or draft in categories other than those established for their fellow citizens.

(*c*) It is further recommended that the House of Delegates of the American Medical Association authorize and urge the Council on National Emergency Medical Service, the officers and Trustees of the Association, as well as its constituent organizations operating through their committees on emergency medical service, to initiate and support a program for the recruitment of a sufficient number of qualified physicians for the armed forces.

(*d*) The Council on National Emergency Medical Service recommends to the House of Delegates that the resolution passed by it in June 1948 relative to the development of a resident training program in the Department of Army and the Department of Navy be clarified. Such a program represents the highest type of medical education but cannot be supported as a program of officer procurement beyond the peacetime needs of the agency to support its primary mission. Full utilization of civilian teachers and civilian clinical and hospital facilities for such a graduate training program of the armed forces or any other government agency is paramount to our national economy and the maintenance of the established high level of medical educational standards and training. Such a graduate training program for the armed forces or for any other government agency must be limited by the actual needs of its peacetime establishment and the support of its primary mission as established by Congress. In our democratic form of government an adequate number of medical specialists always has been and always will be available to serve in the defense of our country.

Respectfully submitted,

Thomas F. Thornton, Chairman.
Howard B. Goodrich, Acting Secretary.
F. S. Crockett.
W. A. Coventry.
James Beebe.

ADDENDA

The Secretary of Defense
Washington

Directive

Armed Forces Medical Advisory Committee: Pursuant to the authority vested in me by the National Security Act of 1947 (Public Law 253, 80th Congress), and in order to insure the highest possible standards of medical and allied professional care for personnel of the Armed Services and civilian employees thereof, there is hereby established, within the Office of the Secretary of Defense, an Armed Forces Medical Advisory Committee hereinafter called the Committee), with the composition and functions hereinafter described:

I. Composition of the Committee: The committee shall be composed of a civilian chairman designated by the Secretary of Defense, the Surgeon General of the Army, the Surgeon General of the Navy, the Air Surgeon, and not less than three other individuals who shall be appointed by the Secretary of Defense from among members of the civilian medical and allied professions.

II. Functions of the Committee: 1. The Committee shall serve in an advisory capacity to the Secretary of Defense on questions which affect the Armed Services as a whole in the fields of medicine and its allied professions. In these several fields, the committee shall, on request, or on its own initiative, submit recommendations to the Secretary of Defense with respect to (*a*) the establishment of general policies and programs for the National Military Establishment as a whole; (*b*) the development of medical and allied services capable of efficiently and effectively supporting the missions and needs of the Armed Services; (*c*) the elimination of unnecessary duplication or overlapping, and (*d*) the development of the maximum degree of continuing cooperation and mutual understanding between members of the civilian medical and allied professions and the Armed Services. The Committee shall concern itself with these matters not only as they relate to the Armed Forces in peacetime but also as they concern plans for mobilization in the event of any future national emergency.

2. The Committee shall, on request, render advice or assistance to the Secretary of the Army, the Secretary of the Navy, the Secretary of the Air Force, the Chairman of the Munitions Board, the Chairman of the Research and Development Board, or the head of any other board or agency in the National Military Establishment, with respect to any problems in the fields of medicine and allied professions which fall within the jurisdiction of his individual department or agency.

III. Administration: 1. The Committee, subject to the approval of the Secretary of Defense and the provisions of this directive, shall provide for its internal organization and shall establish its own rules and procedures.

2. The Committee is authorized to consult with such persons within the National Military Establishment as it may wish, to call upon any agency of the National Military Establishment for information and assistance which it may require, and to solicit the help of any other individuals or agencies, both governmental and non-governmental, whenever it deems this to be appropriate.

3. The Committee is authorized to establish such continuing or temporary subcommittees as may be necessary to conduct studies, assemble information, or otherwise carry out functions of the Committee. In doing so, full use should be made of any existing committee within the National Military Establishment.

4. The Secretary of Defense shall provide the Committee with such personnel, facilities and other administrative services as he from time to time determines are required for the performance of its functions.

Approved: 9 November 1948.

James Forrestal.

Report of Reference Committee on Industrial Health

Dr. Thomas K. Gruber, Chairman, presented the following report, which on motions of Dr. Gruber, duly seconded and carried, was adopted section by section and as a whole:

1. Resolution on Accident Prevention: Your committee believes that this is a most noteworthy suggestion, and that the American Medical Association should be a leader in this most worth while effort, since accidents causing the death of 40,000 persons annually are in all probability preventable. Your committee approves this resolution.

2. Report of Council on Industrial Health: The report of the Council on Industrial Health, pages 67, 68 and 69 of the Handbook, is worthy of commendation, and evidences most worth while activity on the part of the Council.

(*a*) Annual Congress on Industrial Health: Your committee notes with interest that the next Annual Congress on Industrial Health, which will be held Jan. 18 and 19, 1949, will be a joint meeting with the Division of Industrial Hygiene of the United States Public Health Service and interested departments of the American Medical Association. It will include panels devoted to public relations, medical administration and environmental hygiene, medical hospital service, health education and preventive medicine.

Your committee believes that this House of Delegates should reaffirm past actions of this House of Delegates of the American Medical Association which expressed approval of industrial health planning by management, labor and medicine.

(*b*) Workmen's Compensation: Your committee approves the appointment of consultants to the Council on Industrial Health representing the administrative, legal, insurance and technical aspects of workmen's compensation.

(*c*) Civil Defense and Industry: Your committee is in accord with the action taken by the Council on Industrial Health recognizing the important part played by industrial workers in national defense, and approves the appointment of a committee to assist in the formulation of a proper program.

3. Supplementary Report to the Board of Trustees from the Council on Industrial Health on Medical Advisory Board of Welfare and Retirement Fund, United Mine Workers of America: Your committee compliments this supplementary report which deals with the pattern of procedure in the handling of hospital and medical care developed by the United Mine Workers Health and Welfare Retirement Fund. This report is noted with great interest.

Your committee particularly approves of the proposal made by the Medical Advisory Board of the United Mine Workers Health and Welfare Retirement Fund which calls for the creation of an advisory committee from each state medical society in each state in which the fund operates. These committees should be of great assistance to the regional officers in the development of policy and the promotion of proper administrative relationship.

Your committee approves the report of the Council on Industrial Health as well as the supplementary report and commends the Council for the work accomplished.

Respectfully submitted,

T. K. Gruber, Chairman.
Homer G. Hamer.
William L. Benedict.
H. B. Mulholland.

The House recessed at 3:15 p. m. and reconvened at 3:40 p. m., with the Speaker, Dr. F. F. Borzell, presiding.

Report of Reference Committee on Miscellaneous Business

Dr. Walter E. Vest, Chairman, presented the following report, which on motions of Dr. Vest, duly seconded and carried, was adopted section by section and as a whole, after an amendment to include a telegram was tabled:

1. Resolutions on Proposed Veterans Hospital Near Ann Arbor, Mich.: Your committee would reiterate the stand heretofore taken by the American Medical Association in which it explicitly expressed its objection to the utilization of veterans hospitals for non-service-connected disability cases, except for those patients who are medically indigent. It is the opinion of your committee that the present plans of the Veterans Administration will result in overbuilding, and it urges that before constructing other hospitals the medical society of the state in which the proposed hospital is to be constructed be consulted as to the actual need for the proposed hospital, pointing out that government funds are now available under the Hill-Burton Act to increase hospital facilities in local communities where such facilities are needed.

2. Report of Liaison Committee to Consider Red Cross Blood Bank Program: Your committee recommends acceptance of the report of the Special Liaison Committee to Consider Red Cross Blood Bank Program presented by Dr. L. W. Larson as a progress report. Your committee further recommends that this special committee be continued, with as little change in personnel as possible, and that it be instructed not only to act as a liaison committee with the American Red Cross Blood Program, but also to evaluate the private blood bank situation throughout the country and explore the possibilities of the development of further local blood banks in areas not now supplied with blood banks. It also recommends that this committee report the status of its studies and endeavors to each session of the House of Delegates.

3. Resolutions on Reorganization of Council on Medical Service: It is the opinion of your committee that the recommendations coming from the Chairman of the Council on Medical Service should be approved in toto. It recommends, therefore, the approval of the resolutions as presented.

4. Resolutions on Selective Service: Your committee believes that the premises on which the resolutions adopted by the House of Delegates in June 1948 were based were erroneous, and that the resolutions then adopted place the medical profession definitely in an unfavorable light. Your committee recommends, therefore, reconsideration of the action taken in June 1948 and approval of the resolutions.

5. Resolutions on Compulsory Hospital Staff Attendance: Your committee calls attention to the fact that the American Medical Association has not at any time advocated compulsory attendance at stated staff meetings. This committee is in sympathy with the philosophy prompting the resolutions.

6. Report of Committee on Rebates: Your committee has given prolonged consideration to this matter and approves that portion of the report which states that the House of Delegates reiterates condemnation of the practice of any member's accepting rebates, and that the House of Delegates condemns also the practice of giving rebates by a member. It urges that the different state societies in those states in which such practices are not now illegal give serious consideration to the introduction of legislation making the practice of rebating to or by physicians illegal.

Your committee recommends further to the component county societies that on the receipt of a bona fide complaint the disciplinary committee of that society hold a hearing and endeavor to make an investigation of the doctor's records and accounts at society expense, and that a record of such hearing and examination be kept for the information of the state society and, if necessary, for the Judicial Council of the American Medical Association.

Respectfully submitted,

Walter E. Vest, Chairman.
Herbert H. Bauckus.
Britton E. Pickett Sr.
James P. Kerby.
J. Wallace Hurff.

Report of Reference Committee on Legislation and Public Relations

Dr. Thomas K. Lewis, Chairman, presented a report stating that he requested that one section of the report of his committee be considered in Executive Session. The sections of the report submitted in open session were adopted on motions of Dr. Lewis, duly seconded and carried after amendment. This report, as amended, reads:

1. Report of the Executive Assistant: Your committee commends the excellent work of the Executive Assistant and feels that his accomplishments have more than justified the creation of this new office.

The committee wishes to call the attention of the House to the interest of other organizations in the Public Relations Conference held at this session. The committee is of the opinion that the American Medical Association should gratefully accept and commend the assistance of all organizations which have in the past, or may in the future, aid in efforts toward preservation and improvement of a high standard of medical care for the American people. The PR Doctor, the Secretary's Letter and other publications emanating from headquarters have been of inestimable value and will be enhanced and enlarged in the future under the new plan proposed by the Board of Trustees. The basic and most effective form of public relations is that which emanates from the doctor's office; therefore a wider dissemination of these publications is recommended. Your committee recommends the approval of that portion of the report of the Executive Assistant referred to it.

2. Report of the Council on Medical Service: (*a*) Your committee approves that portion of the report allocated to it on pages 115 to 118 of the Handbook. Your committee would comment on the tremendous public relations value of the Council's activities in fostering and stimulating community leadership. The regional conferences have been of exceptional value. Your committee would suggest that a larger attendance at these meetings should be encouraged.

(*b*) The Washington Office: Pages 126 to 128 of the Handbook. The Washington Office has become an increasingly important and effective agency. This Office should be expanded as rapidly as practicable.

Your committee approves those portions of the report of the Council on Medical Service.

3. Resolutions on Medical Service Plans: Your committee approves of these resolutions amended to read as follows:

Resolved, That the American Medical Association reiterate to the public its approval of these medical service plans and stress the desirability of their rapid expansion; and be it further

Resolved, That the American Medical Association urge, with moral support, every constituent state society to undertake the organization and operation of medical service plans, covering the services mentioned above, as expeditiously as possible; and be it further

Resolved, That the American Medical Association urge the rank and file of the profession to participate in and give whole-hearted support to the operation of these duly authorized and approved medical service plans; and be it further

Resolved, That the American Medical Association announce to the public the availability of such plans and give the widest possible publicity as to the purpose of and the benefits to be derived from nonprofit voluntary prepayment medical service plans.

4. Report of Committee on Veterans Affairs: Your committee recommends that the House of Delegates commend the efforts of the Committee on Veterans Affairs and recommends that the committee continue its negotiations with reference to this complex problem, holding as it has done in the past to the principles established by the House of Delegates with regard to the care of veterans who have established the fact of their inability to pay for needed medical services and hospitalization. It is suggested that this committee be directed to report to the House of Delegates in June of 1949 and that, in the meantime, it report periodically to the Board of Trustees concerning the progress of its efforts at negotiations in this matter.

5. Resolutions on Gathering and Dissemination of Information Relative to Health Legislation and Resolution on Presentation of Facts Concerning Health Care to Members of Congress: Resolutions from Kentucky and Oklahoma were introduced regarding activities along the line of contact with legislators. Your committee feels that the mechanism for the implementa-

tion of these recommendations is already in existence and, therefore, that no action need be taken on these resolutions. However, it feels obligated to call to the attention of the members of this House of Delegates the importance of taking home with them the obligation to see to it that their state and component county medical societies participate in the activation of a legislative program which, to be effective, must be on a local level.

Respectfully submitted,

THOMAS K. LEWIS, Chairman.
JOHN W. CLINE.
CHARLES H. PHIFER.
EDWARD H. CARY.
CLIFFORD C. SHERBURNE.

Closed Session

On motion of Dr. Clifford C. Sherburne, Ohio, regularly seconded and carried, the House resolved itself into Closed Session to hear the balance of the Report of the Reference Committee on Legislation and Public Relations, after a proposed amendment of Dr. H. P. Ramsey, District of Columbia, to have the Closed Session at the conclusion of all business, which was duly seconded, was lost.

The House entered into Closed Session at 4:20 p. m.

Report of Reference Committee on Legislation and Public Relations

Dr. Thomas K. Lewis, Chairman, presented the following report, which was adopted as amended, on motion of Dr. Lewis, duly seconded and carried after discussion:

Report of Board of Trustees on the Future of Medicine in the United States; Resolution on National Publicity; Resolutions on a Public Relations Program, and Resolutions on Compulsory Health Insurance: Four resolutions were presented to the committee for consideration coming from (1) the Board of Trustees, (2) Colorado, (3) California and (4) Michigan.

With regard to the Colorado resolution, your committee recommends that it be turned over to the newly appointed Planning Committee as a suggestion for guidance in outlining its activities. The other three resolutions on this subject were rather similar in content and, therefore, have been combined into one resolution, the framework of which is based on the resolutions introduced by the California Medical Association.

The resolutions as finally recommended and adopted by the House read:

Resolved, That this House of Delegates instruct the Board of Trustees to implement a "Statement of Policy" as adopted by the House at this session;

Resolved, That the House of Delegates declare that the Board of Trustees of the American Medical Association has its complete confidence in its intention and ability to carry out the objectives and execute the mandates of the House of Delegates;

Resolved, That the House of Delegates authorize the Board of Trustees to levy an assessment of $25 on the members of the American Medical Association;

Resolved, That this House of Delegates hereby directs the immediate expansion of the Washington Office and its placement directly under the supervision, direction and control of the Board of Trustees;

Resolved, That the immediate employment of suitable public relations counsel to assist in the execution of this program be recommended;

Resolved, That in order to coordinate the activities of the public relations phase of this program at all levels the public relations counsel shall disseminate information to (*a*) the general public, (*b*) the Congress of the United States and (*c*) state and county medical societies and individual physicians;

Resolved, That it be the unanimous expression of the medical profession, as represented by the House of Delegates, that we are firmly united behind the positive and constructive program as outlined by the House of Delegates; that we are confident in the ability of our leadership; that we are determined to protect and foster the high standards of medical care for the public; that we are steadfastly opposed to the regimentation and socialization of American medicine, and that we are confident that an intelligent and informed public will join us in our crusade to ever improve the health and welfare of the American people.

On motion of Dr. Philip W. Morgan, Chairman, Reference Committee on Rules and Order of Business, seconded and carried, the House rose from Closed Session at 4:55 p. m.

Wednesday Afternoon—Continued

The House reconvened in regular session at 4:55 p. m. with the Speaker, Dr. F. F. Borzell, presiding.

Dr. Philip W. Morgan, Chairman, Reference Committee on Rules and Order of Business, moved that the report of the Reference Committee on Medical Service and Prepayment Insurance Plans be heard and action taken without debate, since all interested parties appeared before the reference committee earlier in the day. The motion was regularly seconded and lost after discussion by Dr. John W. Cline, California.

Report of Reference Committee on Medical Service and Prepayment Insurance Plans

Dr. Raymond L. Zech, Chairman, presented the following report, which on motions of Dr. Zech, duly seconded and carried, was adopted section by section and as a whole:

1. Report of Council on Medical Service: That portion of the Report of the Council on Medical Service in the Handbook on pages 118 to 126 has been reviewed and approved with certain changes.

These changes occur on page 119, in which the last sentence has been deleted and the sentence before that in the third paragraph under "Compulsory Sickness Insurance" has been changed to read: "The Council believes that these should be placed in every college, medical school and hospital library and public libraries and in high school libraries on request."

2. Statement of Policy of American Medical Association: This statement submitted by Dr. E. Vincent Askey, representing the California Medical Association, relative to a statement of policy is approved wtih the following change in paragraph 1, line 4. This now reads, "Coverage is now provided throughout the country and protection is being extended rapidly to an ever increasing portion of our population." Your reference committee believes that this could be somewhat strengthened by changing that sentence to read: "Constantly increasing coverage is being provided throughout the country and protection extended to an ever increasing proportion of our population."

The second paragraph, beginning with the words, "compulsory sickness insurance," your committee believes could be improved by placing a period after the word "scheme," so that the second sentence from the bottom of that paragraph would then read: "The American Medical Association rejects any such scheme." deleting the semicolon and making a new sentence to read: "We are equally certain that when the people understand the facts they also will reject it with the same finality."

3. Resolution on Blue Cross–Blue Shield Proposals and Resolutions on National Health Insurance: The resolutions of the Michigan State Medical Society and the following resolutions, presented by Dr. C. C. Sherburne, Ohio, relative to the formation of a Blue Cross–Blue Shield Association and a Blue Cross–Blue Shield Health Service, Inc., were considered:

WHEREAS, The House of Delegates of the American Medical Association has already endorsed, at one of its previous sessions, the establishment of voluntary plans for the prepayment of medical care costs; and

WHEREAS, It has been the purpose of the medical profession, in establishing such plans, to extend their protection as rapidly as possible to all segments of the American public; and

WHEREAS, It has been difficult, if not impossible, to enrol certain large segments of the population because of a lack of correlated enrolment facilities on the part of the plans; and

WHEREAS, The need for establishing adequate facilities for the enrolment of national accounts has been recognized; and

WHEREAS, Specific proposals for establishing such facilities have been prepared and approved by the Blue Shield Commission of Associated Medical Care Plans, and at the request of its member plans; therefore be it

Resolved, That the House of Delegates of the American Medical Association approve the establishment of a Blue Cross–Blue Shield Association and a Blue Cross–Blue Shield Health Service, Incorporated, as contained within the published proposals referred to above.

In an open session lasting three hours, the committee heard arguments for and against the resolutions from Ohio and Michigan. The committee is in entire accord with the necessity and advisability of extending medical care and coverage to all classes of our population. Your committee does not believe that sufficient factual data have been supplied to enable it to make an intelligent decision on this most important subject. Therefore, these resolutions from Ohio and Michigan are not approved.

4. Resolution on Associated Medical Care Plans Incorporated: Your committee recommends disapproval of the Resolution on Associated Medical Care Plans Incorporated.

5. Supplementary Report of Council on Medical Service: The Supplementary Report of the Council on Medical Service relative to the A. M. C. P. proposal to form a national insurance company was carefully reviewed. Your reference committee recommends the adoption of the supplementary report with the following addition to paragraph 1, "further development of coordination of and reciprocity among the local plans."

Respectfully submitted,

Raymond L. Zech, Chairman.
W. H. Halley.
J. F. Londrigan.
H. E. Griffin.
W. L. Estes Jr.
F. J. Pinkerton.
F. J. L. Blasingame.

Report of Board of Trustees

Dr. E. L. Henderson, Chairman, presented the following report:

1. Planning Committee: Mr. Speaker and Members of the House of Delegates: Yesterday, when I announced to you that the Board of Trustees had formed the Planning Committee, I told you that we would submit the name of that committee to you today. We have decided on the name "Coordinating Committee for the Protection of the People's Health." I wish to announce that that committee will have its first meeting tomorrow morning at ten o'clock in Room C, where the Board of Trustees has been meeting.

If any member of the House knows of any organization interested in this great principle of protecting the American Way of Life that will join with the profession, will he please submit the name of that organization to this committee?

2. Interim Session in 1949: At the June meeting of the House of Delegates, I announced that the next Interim Session would be in Tampa, Fla. I wish to tell you at this time that the Board of Trustees has rescinded that and will announce a little later where that session will be held. It was thought by the Board of Trustees that that session should be more centrally located than Tampa.

Resolution on Expression of Appreciation

Dr. James C. Sargent, Wisconsin, asked the unanimous consent of the House to present for adoption without reference to a committee a Resolution on Expression of Appreciation.

Receiving unanimous consent, Dr. Sargent presented the following resolution, which was adopted on motion of Dr. Sargent, duly seconded and carried:

Whereas, The physicians of America have a deep concern over the medical and health care prevailing within the military establishment and in the civilian population of the country in time of national emergency; and

Whereas, The medical profession of America represented by the American Medical Association feels a deep sense of appreciation for the consideration and understanding with which its recommendations concerning the general structure of the National Defense Establishment have been received; therefore be it

Resolved, By the House of Delegates of the American Medical Association that a proper expression of its appreciation be extended to the President of the United States, the Secretary of Defense and the Chairman of the National Security Resources Board by the President of the American Medical Association.

Remarks of Speaker

The Vice Speaker took the Chair.

Dr. F. F. Borzell, Speaker, thanked the members of the House for their cooperation and suggested that hereafter the delegates refrain from stating that resolutions were approved by this, that and the other state, permitting each state to present its own resolution.

He also expressed regret that Dr. Walter F. Donaldson, Pennsylvania, who had served as delegate for more than twenty-five years, was leaving the House at this session, after which the House rose in honor of Dr. Donaldson.

On motion of Dr. John W. Cline, California, duly seconded and carried, the House adjourned sine die at 5:10 p. m.

Washington Letter

(From a Special Correspondent)

Dec. 13, 1948.

Scottish Under-Secretary of Health Visiting United States

T. D. Haddow, Under-Secretary of Health for Scotland, who is visiting the United States as a Commonwealth Fund fellow, will spend the greater part of January in California, he asserted shortly before leaving Washington to inspect the Federal Communicable Disease Center in Atlanta, Ga. On the West Coast he will study state and local public health activities and facilities. Mr. Haddow left Scotland in September, which, he said, was too soon after launching of the British health service program to enable him to draw any conclusions on efficiency of its operation. He volunteered, however, that fears of the Scottish Department of Health that there would be a large volume of complaints by patients in the first few weeks did not materialize. Mr. Haddow added that dissatisfaction was expressed by some participating physicians because payments for services rendered were not as large as they had been given to believe.

Veterans Administration Reports on "Home Town" Medical Care in 1948

An annual report just released by Veterans Administration reveals that during the fiscal year ended June 30, 1948, private physicians treated 761,165 veterans under arrangements with the Veterans Administration. For their services they received $11,437,739 for a total of 2,735,429 treatments. Thus, the average cost per treatment was $4.18 and the cost per veteran, for the twelve month period, was $15.03. In the same period, Veterans Administration staff doctors at outpatient clinics administered 1,680,183 treatments to 865,004 veterans. For the first quarter of the present fiscal year (July, August and September 1948), the number of cases handled—both by private physicians and Veterans Administration staff men—ran about 30 per cent behind the figure for the corresponding period in 1947.

Navy's Second Course for Medical Reservists

Gratified by the success of its special five day course in "Medical Aspects of Special Weapons and Radioactive Isotopes," which ended December 10, the Bureau of Medicine and Surgery has announced that a second course will be conducted in mid-February. It will be five and one-half days in length—a half-day longer than the December seminar—and will offer some curricular changes. It is due to open February 14, with two hundred and ten vacancies for members of the Navy Medical Corps Reserve. The December session had approximately one hundred and fifty in attendance. Applications should be directed to commandants of the respective naval districts before Jan. 17, 1949. The February course, like its predecessor, will be held at the Naval Medical School, Bethesda, Md.

Coming Medical Meetings

Annual Congress on Industrial Health, Chicago, Drake Hotel, Jan. 18-19. Dr. Carl M. Peterson, 535 N. Dearborn St., Chicago 10, Secretary.

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 7-8. Dr. Donald G. Anderson, 535 N. Dearborn St., Chicago 10, Secretary.

National Conference on Rural Health, Chicago, Palmer House, Feb. 4-5. Dr. F. S. Crockett, 535 N. Dearborn St., Chicago 10, Chairman.

American Society for Surgery of the Hand, Chicago, Jan. 21-22. Dr. Joseph H. Boyes, 1401 S. Hope St., Los Angeles 15, Secretary.

International Post-Graduate Medical Assembly of Southwest Texas, San Antonio, Jan. 25-27. Dr. John J. Hinchey, P. O. Box 2445, San Antonio, Secretary.

Southeastern Allergy Association, Durham, N. C., Washington-Duke Hotel, Jan. 22-23. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia, S. C., Secretary.

Southeastern Surgical Congress, Biloxi, Miss., Jan. 24-27. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Ga., Secretary.

Western Section American Urological Association, Coronado, Calif., Hotel del Coronado, Jan. 17-19. Dr. Adolph A. Kutzmann, 1930 Wilshire Blvd., Los Angeles 5, Secretary.

GOVERNMENT SERVICES

ARMY

CONSULTANTS TO THE PACIFIC AREA IN 1948

The Surgeon General's Office has been carrying out a program designed to bring to the Army Medical Department in the Pacific Area the latest advances in the field of medicine and in so doing assigned during 1948 the following civilian consultants to aid in this work:

MARCH

Name	Residence	Specialty
Cobey, Milton C.	Washington, D. C.	Orthopedics
Horgan, Edmund	Winchester, Va.	Surgery
Overstreet, Sam A.	Louisville, Ky.	Medicine
	APRIL	
Bauer, Frank, Lt. Col.	Washington, D. C.	Medicine
Colonna, Paul C.	Philadelphia	Orthopedics
Mustard, Russell L.	Battle Creek, Mich.	Surgery
Walson, C. M., Brig. Gen.	Great Neck, N. Y.	Adm. Specialist
	MAY	
Blankenhorn, M. A.	Cincinnati,	Medicine
Currier, W. D.	Pasadena, Calif.	Ear, Nose & Throat
Webster, James R.	Chicago	Dermatology & Syphilology
	JUNE	
Bannick, Edwin G.	Seattle	Medicine
Barnard, Leonard	Oakland, Calif.	Orthopedics
Joyner, E. N., III	New York	Pediatrics
Williamson, Edwin M.	Kalamazoo, Mich.	Neuropsychiatry
	JULY	
Cotton, John M.	New York	Neuropsychiatry
Griffith, George C.	Pasadena, Calif.	Medicine
Koontz, Amos	Baltimore	Surgery
Price, Carleton N.	Washington, D. C.	Obstetrics & Gynecology
Snyder, Clarence H.	Grand Rapids, Mich.	Orthopedics
	AUGUST	
Bailey, Percival	Chicago	Neuropsychiatry
Baker, Lenox D.	Durham, N. C.	Orthopedics
Helwig, Ferdinand C.	Kansas City, Mo.	Pathologist
Speir, Edward B.	Seattle	Surgery
	SEPTEMBER	
Compere, Edward L.	Chicago	Orthopedics
Sanger, Paul W.	Charlotte, N. C.	Surgery
	OCTOBER	
Furstenberg, A. C.	Ann Arbor, Mich.	Ear, Nose & Throat
Hayman, J. M.	Cleveland	Medicine
Smyth, Francis Scott	San Francisco	Pediatrics
Waggoner, Raymond W.	Ann Arbor, Mich.	Neuropsychiatry
White, J. Warren	Greenville, S. C.	Orthopedics
	NOVEMBER	
Kendell, H. Worley	Chicago	Medicine
Kerr, William J.	San Francisco	Medicine
Moore, John R.	Mobile, Ala.	Orthopedics

MILITARY RESIDENT TRAINING

Regular Army commissions, in the grades of first lieutenant and captain, have been awarded to eighteen physicians preparatory to their entering the first year of military residency training in their various professional specialties next January.

Major General Raymond W. Bliss, the Surgeon General of the Army, announced that five Army teaching hospitals—Letterman General Hospital, San Francisco; Brooke General Hospital, Fort Sam Houston, Texas; Oliver General Hospital, Augusta, Ga.; Fitzsimons General Hospital, Denver, and Walter Reed General Hospital, Washington, D. C.—are providing instruction at the levels of assistant resident, resident and senior resident in ophthalmology, internal medicine, general surgery, pathology, orthopedics, psychiatry, otolaryngology, radiology, urology and other specialties.

This training as part of the recently evolved Graduate Professional Training Program is designed to offer all qualified applicants the opportunity to meet their requirements for certification by an American specialty board in the fields of their choice, contingent on the needs of the Army.

Applications for the next phase of the training program, to begin next July 1, are being received by the Office of The Surgeon General. No action will be taken on these until physicians applying have accepted commissions in the Regular Army.

The eighteen newly commissioned officers who will enter the program in January are: Herbert M. Alston, Columbus, Texas; John H. Bickerton Jr., Los Angeles; Ernest M. Bralley Jr., New York; James N. Brien Jr., Memphis, Tenn.; Samuel J. Camarata, Pittsburgh; Layne E. Carson, Wynne, Ark.; Francis E. Foley, New York; Harry M. Henderson, Fort Sam Houston, Texas; Augustus B. Jones Jr., San Francisco; Oliver Mays, Austin, Texas; Clarence S. Miller, San Francisco; William Moore, Fort Sam Houston, Texas; Marvin E. Perkins, Fort Eustis, Va.; Thomas F. Puckett Jr., 7th Infantry Division; Herbert P. Sube, Madigan General; Leo S. Szakalun, Wilmington, Del.; Donald R. Taylor, 1106th A.S.U. Medical Detachment, and George S. White, Ridgely, Md.

RESEARCH ON JAPANESE ENCEPHALITIS

The Surgeon General announces that plans have been made for a new study of the carriers of Japanese encephalitis and host reservoirs of this disease in Okinawa and Japan. This study will be made on a large scale, particularly in view of the recent epidemic of encephalitis among the natives, which carried a high mortality rate. Basic material for the study is provided in a recent publication entitled "Mosquito Fauna of Japan and Korea," by Major Walter J. La Casse, an entomologist of the Army Medical Service Corps. This report represents a study of the countless breeding places for mosquitoes in rice paddies, decorative pools in sacred gardens, moats, water-filled depressions in bombed areas, and other places. For years the Army Medical Research and Graduate School has been engaged in research to find a successful treatment of this disease, chiefly by means of a vaccine. Colonel Thomas E. Patton Jr., Deputy Chief, Preventive Medicine Division, the Surgeon General's Office, is hopeful that by close cooperation with allied scientists and civilian consultants a method of controlling Japanese encephalitis will be found.

BIOLOGISTS, ENTOMOLOGISTS AND MYCOLOGISTS WANTED

The Board of U. S. Civil Service Examiners, Army Chemical Center, Md., announces that opportunities are available for the employment at that location under civil service of biologists (medical), entomologists (research) and mycologists (research) for probational appointment. For details write to the Board of U. S. Civil Service Examiners, Army Chemical Center, Md.

MONTHLY MEDICAL MEETING

At the regular monthly medical meeting conducted by The Surgeon General at the Walter Reed Hospital, Washington, D. C., on December 16, Dr. Howard B. Lewis will speak on "Protein Metabolism in Disease" and Dr. J. W. Conn on "Endocrinology and Metabolic Diseases." Both speakers are from the University of Michigan Medical School, Ann Arbor.

ARMY MEDICAL LIBRARY

The increase in Japanese publications received by the Army Medical Library has necessitated organizing an extra team of catalogers in the Index-Catalogue Division to handle Japanese publications published without romanized abstracts.

The Army Medical Library now holds 85 per cent of the important German medical books published during the war years, practically all of which were obtained through the Library of Congress Cooperative Acquisitions Project. The library will attempt to acquire the other 15 per cent.

The library has received films of 252 manuscript theses submitted to the University of Paris for the year 1939; films of several thousand theses submitted in manuscript form from 1943 to 1948 will be received, and thus complete the library's collection of Paris theses. Copies of these films can be supplied to other libraries from the negatives in the Army Medical Library.

RESEARCH ON MELANOMA

The Surgeon General announces that the Army will make an intensive study of some 400 autopsy and surgical specimens of melanoma at the Army Institute of Pathology. Thousands of slides for an exhaustive study of this subject will be prepared, in order, if possible, to bring about a complete histologic understanding of this disease, its manner of growth and criteria for recognition. To cover the Army's broad field of dermatology, twenty-seven additional specialists are needed in the Army Medical Department—*seven dermatologists* who are certified specialists and twenty who have completed dermatology residencies. Information regarding these openings may be obtained by writing The Surgeon General of the Army, Washington 25, D. C.

PERSONAL

Colonel Charles H. Beasley, Retired, has received the military award of the Order of Leopold from Belgium for outstanding services during the time that he served as Surgeon of the Advanced Section of the Communications Zone with headquarters at Namur from Oct. 25, 1944 to April 7, 1945. During this period Colonel Beasley established and directed twenty-five hospitals in Belgium which handled more than 1,000,000 casualties.

NAVY

FIRST ACTIVE DUTY AS INTERNS

The following lieutenants (jg) with the medical corps reserve have received orders for their first active duty as interns in the institutions indicated: John S. Anderson, Salina, Kan., to City Hospital of Akron, Ohio; Markham J. Anderson, St. Paul, Minn., to a fellowship in surgery at the Mayo Foundation, Rochester, Minn.; Sidney J. Blair, Chicago, to Cook County Hospital, Chicago; Keith M. Coverdale, Fort Wayne, Ind., to a residency in pediatrics at the Naval Hospital, Philadelphia; Joseph A. Fleetwood Jr., Conway, N. C., to Medical College of Virginia Hospital, Richmond, Va.; Harry R. Freeman, Oak Park, Ill., to Cook County Hospital, Chicago; Edward M. Goldberg, Chicago, to Cook County Hospital; Charlie R. Jernigan, Tyler, Texas, to Parkland City-County Hospital, Dallas, Texas; Gene B. Kaufman, Chicago, to Cook County Hospital; Sheldon H. Kluger, Wyoming, Pa., to Philadelphia General Hospital; George P. Kochis, Whiting, Ind., to Saint Francis Hospital, Evanston, Ill.; Ralph B. Martin, Barstow, Calif., to Huntington Memorial Hospital, Pasadena, Calif.; Kenneth W. Meinert, Milwaukee, to St. Mary's Hospital, Milwaukee; Berry B. Monroe, Laurinburg, N. C., to Cincinnati General Hospital; Marshall C. Morgan, Summit, Ohio, to City Hospital of Akron; Robert F. Jejedly, Chicago, to Saint Francis Hospital, Evanston, Ill.; Lester C. Paterson, Rosedale, N. Y., to Philadelphia General Hospital; William A. Shaver, Bradford, Pa., to Graduate Hospital of the University of Pennsylvania, Philadelphia; William E. Sheely, Elizabeth City, N. C., to Philadelphia General Hospital; Jesse B. Shelmire Jr., Dallas, Texas, to the Roosevelt Hospital, New York; Vernon L. Summers, Portland, Ore., to Minneapolis General Hospital; Robert L. Swezey, Los Angeles, to Los Angeles County General Hospital; Sidney A. Tyroler, Bexley, Ohio, to Indianapolis General Hospital; David H. Walworth, Wilmette, Ill., to Evanston Hospital, Evanston, Ill.; James A. White Jr., Memphis, Tenn., to John Gaston Hospital, Memphis; Guy T. Williams, Little Rock, Ark., to St. Louis City Hospital; Robert T. Brown, Bloomdale, Ohio, to the Naval Hospital, Philadelphia; William W. Bryant, Senecaville, Ohio, to the Naval Hospital, San Diego, Calif., and Donald L. Gantt, Delaware, Ohio, to the Naval Hospital, Long Beach, Calif.

SPECIAL COURSES FOR RESERVE OFFICERS

The first of a series of five day special courses in the medical aspects of special weapons and radioactive isotopes began December 6 at the Naval Medical School, Bethesda, Md., and two hundred reserve medical officers were in attendance. The staff for these courses includes civilian consultants, representatives from the Atomic Energy Commission and Oak Ridge, Tenn., and Naval officers who specialize in the use of radioactive isotopes. Part of the courses will comprise visits to the cyclotron at the Carnegie Institute at Chevy Chase, Md., the National Cancer Institute and the National Institutes of Health. The Surgeon General, Rear Admiral C. A. Swanson, has announced that the second course in this series will begin February 14, with only 210 vacancies open. Reserve medical officers who desire to take the course should make application to the commandant of their local Naval district prior to Jan. 17, 1949.

POSTGRADUATE INSTRUCTION

The following medical officers have been nominated for the course of postgraduate instruction indicated: Comdr. Thomas M. Foley, Washington, D. C., to a fellowship in children's orthopedics at the Shriner's Hospital for Crippled Children, Honolulu, T. H.; Lieut. James A. Kaufman, Blue Island, Ill., to a residency in surgery at the Naval Hospital, Great Lakes, Ill., and Lieut. (jg) August P. Ciell, Roxborough, Pa., to a residency in otolaryngology at the Naval Hospital, Philadelphia.

MEETING OF RESERVE MEDICAL DIVISIONS

A staff meeting of Naval Reserve Volunteer Medical Divisions 4-1 was held in Pittsburgh November 8. Those present comprised medical, dental and medical service corps officers, nurses and hospital corpsmen. Captain J. R. Thomas, Fourth Naval District medical officer, talked on the retirement plan for reserve officers which was discussed by Captain Paul Titus, M.C., U.S.N.R., and others. Naval medical motion pictures were exhibited.

RECALLED TO ACTIVE DUTY

The following medical reserve officers have been voluntarily recalled to active duty: Comdr. Lillian Hadsell, Bergen County, N. J., to the Naval Hospital, St. Albans, Long Island, N. Y.; Lieutenants (jg) Cyril J. Honsik, Oak Park, Ill., to a residency in general surgery at the Naval Hospital, National Naval Medical Center, Bethesda, Md., and Henry Santina, Chicago, to the Naval Air Station, Pensacola, Fla.

SYMPOSIUM ON DIABETES MELLITUS

The Naval Hospital, Bethesda, Md., and the District of Columbia Diabetes Association sponsored a symposium on diabetes mellitus at the Naval Medical Center, December 10, when problems in diabetes in relation to surgery, obstetrics and pediatrics were discussed. In addition to Naval officers, the speakers included Drs. Samuel Benjamin and Louis K. Alpert of Washington, D. C., and Dr. Thomas N. Carey of Baltimore.

PERSONAL

Lieut. Comdr. Margaret M. Kiehm (bacteriologist), Lieut. Frederick J. Lewis Jr. (physicist) and Lieut. Robert S. Herrmann (psychologist) have been appointed to the Medical Service Corps of the Regular Navy.

PUBLIC HEALTH SERVICE

REGULAR CORPS EXAMINATION FOR MEDICAL OFFICERS

A competitive examination for appointment of medical officers in the regular corps of the U. S. Public Health Service will be held on Jan. 17, 1949, at various points throughout the United States. Appointments are permanent in nature and provide opportunities for a lifetime career in clinical medicine, research and public health at Marine hospitals and other Public Health Service facilities. Appointments will be made in the grades of assistant surgeon and senior assistant surgeon, for which entrance pay is, with allowance for dependents, $5,011 and $5,551. Provisions are made for promotions at regular intervals up to and including the grade of senior surgeon and for selection for promotion to the grade of medical director, at $9,751 per annum. All applicants must be United States citizens, at least 21 years of age and graduates of a recognized school of medicine. Additional information may be obtained from the Surgeon General, United States Public Health Service, Attention: Division of Commissioned Officers, Washington 25, D. C.

SURVEY OF CASES OF MULTIPLE SCLEROSIS

The Public Health Service and the National Multiple Sclerosis Society are sponsoring a survey of multiple sclerosis cases in four different parts of the country to determine incidence, prevalence and local distribution of the disease and to attempt to find out whether geographic, climatic or racial factors influence case distribution. Dr. L. T. Kurland is the Public Health Service representative on the cooperative project. The dean of a school of public health or a school of medicine will supervise each survey; the data will be gathered by public health nurses or medical students. Expenses of local teaching institutions in connection with the survey will be met by grants from the National Multiple Sclerosis Society. The physicians, hospitals and nursing homes in each area will be questioned in an attempt to record all cases in the survey areas. The first survey began in New Orleans on November 15. Subsequent surveys will be conducted in San Francisco, Boston and rural and urban areas covered by medical facilities in Minneapolis, St. Paul and Rochester, Minn.

CANCER RESEARCH

Surgeon General Scheele has approved the following nine National Cancer Institute grants totaling $82,688 to support laboratory and clinical research in cancer. The grants were recommended by the National Advisory Cancer Council at its meeting in September but were contingent on adjustment of certain items in the original request.

Research Grants

Institution	Amount Granted	Subject
Univ. of San Francisco, San Francisco	$ 3,272	Synthesis and microbiologic evaluation of amino acid analogues
Michael Reese Hospital, Chicago	12,000	Nutritional factors in the origin and growth of tumors
University of Illinois, Chicago	11,448	Study of formation of jaw tumors in a known strain of rats
Indiana University, Bloomington	7,506	Factors influencing abnormal development in mammals, with particular reference to neoplasms of thyroid and thymus tissue in man
Tulane University, New Orleans	18,576	Relationship of hormones to neoplasia
Smith College, Northampton, Mass.	4,752	Studies of tumors in plant embryos
University of Missouri, Columbia	10,000	Development of skin cancer in mice and men
University of Virginia, Charlottesville	11,880	Studies of blood in cancer patients
University of Wyoming, Laramie	3,200	The effect of deuteron bombardment on the chemical composition and carcinogenicity of organic compounds

INTERNATIONAL CONGRESS ON RHEUMATIC DISEASES

Surgeon General Scheele has announced that, on recommendation of the National Advisory Health Council, a grant of $15,000 has been approved to help finance the International Congress on Rheumatic Diseases in New York May 30-June 3, 1949. The American Rheumatism Association, which is serving as host for the Congress, will provide most of the financing. The Congress, sponsored by the International League against Rheumatism, will bring together leading authorities throughout the world on rheumatic diseases including arthritis.

DIVISIONS OF SANITATION AND WATER POLLUTION CONTROL

The Surgeon General announces a reorganization of the engineering activities of the Public Health Service, the former sanitary division being replaced by a Division of Sanitation and a Division of Water Pollution, both under the supervision of Assistant Surgeon General Mark D. Hollis. The expansion of the water pollution section into a new division is a result of the Water Pollution Act passed by Congress in 1948, which requires The Surgeon General to provide financial and technical assistance to the various states in their water pollution control programs. The chief sanitary engineering officer (Assistant Surgeon General Hollis) is responsbile to The Surgeon General for the general administration of programs under the Divisions of Sanitation and Water Pollution and the Environmental Health Center, Cincinnati, which is engaged in basic research in the field of water and sewage treatment and milk and food sanitation. Sanitary Engineer Director Carl E. Schwob will be head of the new Division of Water Pollution Control, and Sanitary Engineer Director Callis H. Atkins will be head of the new Division of Sanitation.

RESEARCH ON MENTAL HEALTH

The last session of Congress authorized the Surgeon General of the Public Health Service to make grants for research in the mental health field for periods beyond the fiscal year 1948-1949. These grants, if approved during the fiscal year 1948-1949, will constitute a contractual obligation of the federal government to forward finance the research projects over and beyond the present fiscal year. Forward financing of grants to medical schools for undergraduate training in mental hygiene was also authorized. The contractual obligations for both research and training grants must not exceed $2,300,000. Initial decisions as to which institutions and individuals are to benefit from this form of forward financing will be made by the National Advisory Mental Health Council at its meeting in December. The contract authorization ceiling will not permit forward financing of all mental health grants. Consequently, some will continue to be paid under the old system, which does not obligate federal support beyond the current fiscal year.

APPOINT MENTAL HOSPITAL CONSULTANT

Dr. Riley H. Guthrie has been appointed special mental hospital consultant to the Mental Hygiene Division of the Public Health Service. He will be available after November 1 to conduct surveys of mental hospitals and provide consultive services regarding hospital administration, care of patients and other problems of mental hospitals. Requests for his services may be made by state governors, superintendents of state mental hospitals, or other qualified persons concerned with the administration of mental hospitals. Dr. Guthrie, who has been associated with state mental hospitals for twenty years, has been superintendent of the state hospital at Norwich, Conn., for two years. Previously, he served on the staffs of St. Elizabeth's Hospital, Washington, D. C.; Boston Psychopathic Hospital; Massachusetts Department of Mental Diseases; Monson State Hospital, Palmer, Mass.; Massilon State Hospital, Massilon, Ohio, and Arkansas State Hospital, Little Rock.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

COLORADO

Dr. Ruck to Head Department of Biophysics.—The University of Colorado announces the establishment of a department of biophysics at the University Medical Center in Denver. A graduate program leading to a Ph.D. degree in biophysics will be offered. Courses of instruction include training in the use of radioactive isotopes in biology, the interactions of ionizing radiations with living systems, study of the behavior of biologically important macromolecules and biostatistics. The department will also take part in the Atomic Energy Commission's program for postdoctoral training in biophysics. A research program centering about cellular growth processes and study of the radiation chemistry of artificially induced mutations is now being set up. Theodore Puck, Ph.D., formerly of the departments of medicine and biochemistry of the University of Chicago, has been named head of the department.

CONNECTICUT

Personal.—Dr. Hilda H. Kroeger, director of Maternal and Child Health in the state department of health, Phoenix, Ariz., has been appointed assistant director of Grace-New Haven Community Hospital and professor of hospital administration at Yale University. Dr. Kroeger received her M.D. degree from Rush Medical College in 1932.

State Association Medical Service Plan.—The Connecticut State Medical Society at the semiannual meeting of the society's house of delegates December 9 adopted a prepayment plan through which state residents may meet costs of maternity and surgery. It offers full payment of doctor's fees for childbirth or surgery to subscribers whose annual incomes do not exceed the following amounts: $3,500 for subscriber and family; $3,000 for subscriber and one dependent, and $2,500 for individual subscriber. Subject to further study by actuaries, tentative monthly subscription rates are 75 cents for subscriber only; $1.50 for subscriber and one dependent, and $2.25 for subscriber and family. The plan will be operated on nonprofit principles, in cooperation with the Connecticut Blue Cross organization. Control will be exercised through the Connecticut Medical Service, a new corporation whose board of directors will comprise six licensed physicians appointed by the state medical society and six members named by the Connecticut Blue Cross. A Professional Policy Committee of nine physicians will determine and recommend action in all matters involving medical ethics and professional practice. Enrolment of physicians in the plan will be purely voluntary. Those enrolling will agree to accept the amounts listed in the plan's schedule of fees as full payment for subscribers whose incomes do not exceed the stated levels. For subscribers whose incomes are above the stated limits any additional charge will be subject to patient-physician agreement. Membership in the plan will be open without physical examination or age limit to all persons holding Blue Cross Hospital Service contracts.

ILLINOIS

Increase in Diabetes in Illinois.—According to the Illinois State Department of Public Health the incidence of diabetes has shown a steady upward trend in the state during the past twenty-five years. With 1,367 deaths reported in 1922, mortality from diabetes was at a rate of 19.6 per 100,000 population. By 1932 the toll had climbed to 2,079, or a death rate of 25.8, and in 1947 the number of deaths due to diabetes totaled 2,735, with a rate of 33.3 per 100,000 population.

Chicago

Hospital News.—Work began November 30 on a four story 75 bed addition to the South Shore Hospital costing $850,000. The new structure, for general medical, surgical and obstetric cases, will have four new operating rooms, two delivery rooms, four labor rooms, six nurseries and additional laboratory and utility space. A blood bank will also be set up as a new service by the hospital.

Course in Electrocardiographic Interpretation.—A course in electrocardiographic interpretation for graduate physicians will be given at the Michael Reese Hospital Postgraduate School each Wednesday from 7 p.m. to 9 p.m. for twelve weeks beginning Feb. 9, 1949. Information may be obtained from Dr. Samuel Soskin, Dean, Michael Reese Hospital Postgraduate School, 29th Street and Ellis Avenue, Chicago 16.

Personals.—Dr. Stanley Gibson will retire January 1 as chief of staff of Children's Memorial Hospital, having attained the retirement age. He will continue on the medical staff of the hospital as consulting cardiologist. Dr. Gibson has been on the staff since 1932 and chief of staff since 1944. Dr. John A. Bigler, a member of the medical staff since 1931 and medical director since 1944, has been appointed chief of staff.

Organize Diabetes Association.—A group of Chicago physicians, nurses, dietitians and laymen have organized the Chicago Diabetes Association, which eventually will be incorporated and will apply for affiliate status to the American Diabetes Association, on whose invitation the Chicago association was formed. Officers are Dr. Arthur R. Colwell, president; Dr. Samuel Soskin, vice president; Dr. Henry T. Ricketts, secretary, and Mr. Paul Dice, treasurer. After the organizing procedures are completed, membership will be expanded to include other physicians, nurses and dietitians, as well as social workers and technicians.

IOWA

Society News.—Private practitioners and representatives of each of the state's mental institutions have organized the Iowa Neuro-Psychiatric Society with Dr. Paul E. Huston, Iowa City, as president and Dr. Grace M. Sawyer of Woodward, secretary.——The Linn County Medical Society on January 13 will hear Dr. Robert L. Sanders, Memphis, Tenn., speak on "The Peptic Ulcer Problem with Special Reference to Bilateral Vagal Resection."

KENTUCKY

State Medical Election.—The Kentucky Medical Association installed Dr. Charles A. Vance, Lexington, as president and chose Dr. Hugh L. Houston, Murray, as president elect at its annual meeting in September. Dr. Bruce Underwood, Louisville, was elected secretary. Dr. Houston, at the age of 40, is reported to be the youngest president in the history of the organization. He received his M.D. degree from Vanderbilt University School of Medicine, Nashville, 1933.

Portrait of Irvin Abell.—A portrait of Dr. Irvin Abell Sr., an alumnus and member of the Board of Trustees of the University of Louisville, was recently presented to the School of Medicine. Dr. Fred W. Rankin, Lexington, in the presentation speech cited Dr. Abell as "the most distinguished alumnus of this university, [who] has shed lustre on his Alma Mater by his professional accomplishments, his Christian example, and his devoted service to the organized medical profession." Dr. Abell is a former president of the American Medical Association.

LOUISIANA

Personal.—Dr. E. W. Alton Ochsner, William Henderson professor of surgery at Tulane University of Louisiana School of Medicine, New Orleans, has been reappointed consultant to the headquarters, U. S. Air Force.

Cancer Research.—Tulane University of Louisiana School of Medicine, New Orleans, has received a grant of $47,452 from the American Cancer Society to expand the specialized care and study of selected patients regardless of their ability to pay.

Founder's Day Forum.—The Rapides Parish Medical Society and the Eighth District Medical Society are sponsoring the Annual Founder's Day Forum Jan. 15, 1949 at the Hotel Bentley in Alexandria. This meeting will be attended by members of the medical profession from Central Louisiana and will be conducted by members of the teaching staff of Tulane University and Louisiana State University of New Orleans. Subjects to be discussed include "The Use of Blood and Blood Substitutes," "Early and Late Treatment of Traumatic Injuries with Special Reference to those of the Face," "Carcinoma of the Colon" and "Mycotic Infections of the Skin."

MARYLAND

Society News.—The Montgomery County Medical Society, which meets on the third Tuesday of each month at 8:15 p. m. at the Manor Country Club, Norbeck, has arranged the following meetings for 1949:

Jan. 18, T. Wiley Hodges, Richmond, Va., The Bone Graft in Reconstructive Surgery.
Feb. 15, Norman H. Topping, Bethesda, Md., Research Program of the National Institutes of Health.
March 15, Robert J. Reeves, Durham, N. C., Diagnostic Problems in Radiology.
April 19, Wallace E. Herrell, Rochester, Minn., Anti-Biotics and Clinical Medicine.

MICHIGAN

State Medical Election.—The Michigan State Medical Society at its meeting in September elected the following officers for 1948 and 1949: Dr. Edward F. Sladek, Traverse City, president; Dr. William E. Barstow, St. Louis, president elect, and Dr. L. Fernald Foster, Bay City, secretary.

Report of Mediation Committee.—Eighteen months ago the Wayne County Medical Society appointed a mediation committee to analyze and adjust all complaints having to do with the economics of the practice of medicine against members of the society in Detroit and environs. Only thirty-seven complaints from a population of 2,500,000 have been received in one and one-half years.

Postgraduate Clinical Conference.—The third annual Michigan Postgraduate Clinical Institute, sponsored by the Michigan State Medical Society, Wayne County Medical Society, University of Michigan Medical School and Department of Postgraduate Medicine, Wayne University College of Medicine, Ann Arbor, and the Michigan Foundation for Medical and Health Education, Inc., will be held at the Book-Cadillac Hotel, Detroit, March 23-25, 1949. The complete program will be announced in January. A "Heart and Rheumatic Fever Day" on March 26 will follow the institute. Members of American and Canadian medical associations are invited to the institute, as well as to the heart conference. There is no registration fee.

NEVADA

State Medical Election.—The Nevada State Medical Association chose Dr. Rodney E. Wyman, Reno, president; Dr. David E. Hemington, Las Vegas, president-elect, and Dr. Roland W. Stahr, Reno, secretary-treasurer, for the coming year.

NEW JERSEY

Organize Speakers' Bureau.—The Camden County Medical Society has organized a Speakers' Bureau with an initial complement of twenty-six speakers. Letters have been sent to more than 1,000 organized lay groups in the county indicating that requests for medical speakers will receive consideration.

Martland Lecture.—The thirteenth annual Harrison S. Martland Lecture under the auspices of the Essex County Pathological and Anatomical Society was given in Newark December 7 by Dr. Shields Warren, Boston, on the "Pathology of Diseases of the Thyroid with the Present Status of Radioactive Treatment."

Blood Banks.—A growing number of communities in New Jersey are reported to have organized "walking blood banks." Prospective blood donors are recruited by the American Red Cross and typed for donation of blood if, as and when needed. Union Township is the latest to set up such a blood bank with the cooperation of the Union Township Medical Society and the Elizabethtown Red Cross Chapter. A similar program is contemplated for Mercer County and has the endorsement of the county medical society.

Medical School Proposal Approved.—Governor Alfred E. Driscoll has approved a proposal of the Medical Society of New Jersey for a committee to study the "need for the development and operation of an approved medical school" for New Jersey. The society's proposal is that a representative committee be appointed to be composed of sixteen members, four of whom would be designated by the medical society, four by Rutgers University in New Brunswick, and eight public members appointed by the governor. On completion of its study the committee will be requested to make its recommendations to the governor and the legislature. This is viewed as the first formal step toward the eventual accomplishment of the objective long sought by the Medical Society of New Jersey.

NEW YORK

Regional Health Offices.—New York's six regional health offices are now in operation. Dr. Robert L. Vought is director of the lately opened New York City Suburban Regional Office in White Plains. Dr. Ralph M. Vincent assumed duties as head of the Albany regional office on October 28. The first three regional offices were opened in Buffalo, Rochester and Syracuse early in August, with Drs. Archibald S. Dean, Buffalo, Joseph P. Garen, Rochester, N. Y., and Ray D. Champlin, Oneonta, N. Y., as regional directors. The sixth regional office was opened in November and will operate under the direction of Dr. Philip J. Rafle, former district state health officer for the state health district in New York City. The regional offices were established early this year (The Journal, February 28, p. 635).

New York City

Residencies Available.—Residencies in neurology are now available under the Veterans Administration program, beginning Jan. 1, 1949 at the Bellevue Psychiatric Hospital, New York. Applications may be secured by writing Professor S. Bernard Wortis, New York University College of Medicine, Department of Neurology, 400 East Thirtieth Street, New York 16.

Dr. Bernecker to Retire.—Dr. Edward M. Bernecker, commissioner of hospitals since March 1942, will retire December 31. Dr. Bernecker entered city service in 1915 as an intern in Metropolitan Hospital on Welfare Island, where he became resident physician and in 1927 deputy medical superintendent. He was medical superintendent and later general superintendent in Kings County Hospital in Brooklyn.

The James Ewing Cancer Hospital.—Cornerstone ceremonies for the ten story 300 bed James Ewing Hospital for cancer, to be affiliated with the Memorial Cancer Center, were held November 26. Construction costs of the hospital, expected to be completed late next year, will total $5,632,250. The hospital was named by the city, which will operate it for the care and treatment of long term cancer patients and research, in honor of the late Dr. James Ewing because of his long association with Memorial Hospital. Construction of the hospital began on Jan. 24, 1947 (The Journal, Feb. 8, 1947).

Appoint Head of Public Health Education Division.—Dr. Llewellyn E. Kling, formerly of the U. S. Public Health Service, has been appointed associate professor of public health education and head of the Public Health Education Division in Columbia University School of Public Health. He is a graduate of Louisiana State University School of Medicine, New Orleans, and studied public health at Columbia. He has been county health officer in Nebraska and served for six years as a commissioned officer in the public health service active in tuberculosis and cancer educational and control work. He has served more recently as medical director of the Planned Parenthood Federation.

Personals.—Dr. Arthur Sayer was recently appointed associate clinical professor of dermatology at the New York Medical College, Flower and Fifth Avenue Hospitals. Dr. Sayer, a graduate of the Columbia University College of Physicians and Surgeons, has been an attending dermatologist at the Morrisania City Hospital.——Dr. George G. Deaver, professor of clinical rehabilitation and physical medicine at New York University College of Medicine, has been awarded the Medal of Merit for pioneer work in the field of rehabilitation.——Dr. Carl R. Wise, instructor in medicine at the Columbia University College of Physicians and Surgeons, has succeeded Dr. William H. McCastline as university medical officer. Dr. McCastline retired last June. Dr. Wise, a graduate of Harvard Medical School, Boston, served in the medical corps in World War II.——Dr. Edward H. Mandel was recently made correspondent member of the Japanese Dermatological Association in the United States.

Immunize Dogs Against Rabies.—The health department's experimental campaign in Staten Island for the elimination of rabies is reported as being received apathetically by dog owners in the second year of its operation. Vaccination of all licensed dogs was made compulsory after an outbreak of rabies in Staten Island last year. Vaccination centers were set up in various parts of boroughs in June 1947, after which 11,000 of the island's 14,000 licensed dogs were immunized. During the second year of the experiment, however, only 3,800 dogs have been inoculated thus far, and only a few of the animals vaccinated last year have been brought back for a second injection. The health department is sending letters to all dog owners warning them to have their pets inoculated again; new dog owners are being informed concerning the ruling. Seven rabid dogs have been found on Staten Island, compared with 18 last year. The last death reported in the city from the disease was in 1944.

NORTH CAROLINA

State Cancer Centers.—Since March 1, 1948, when the Division of Cancer Control of the North Carolina State Board of Health was activated, cancer centers have been set up at Wilmington, Asheville and Winston-Salem. Specialists make a diagnosis, which with the recommendations is sent by letter to the patient's personal physician. Only men and women 40 years of age or older are admitted to these clinics. A survey of work done by the clinics operating an average of three and a half months reveals that of 1,277 persons examined, 76 were found to have cancer; that represents more than 6 per cent of the total number examined, and twelve times the average found in detection clinics throughout the nation, according to Dr. John W. R. Norton, acting state health officer. The State Board of Health by authority of the Cancer Act in 1945 set up the North

Carolina Cancer Control Program. Affiliated agencies are the Medical Society of the State of North Carolina and the American Cancer Society, North Carolina Division. Funds are derived from appropriations by the U. S. Public Health Service and the State Legislature; and the Cancer Division donated $25,000 in 1946 to administering the program.

OKLAHOMA

Personal.—Dr. John F. Hackler, professor of preventive medicine and public health since 1943 at the University of Oklahoma School of Medicine, Oklahoma City, resigned October 1, to accept a position as director of the City-County Health Department, Muskogee.

Narcotic Violation.—According to the Bureau of Narcotics, Dr. Edward C. Keyes, Pawhuska, pleaded guilty to violation of the Federal Narcotic Law in the U. S. District Court at Tulsa September 29. A sentence of two years was suspended and he was placed on probation for a like period.

Fifty Years in Practice.—More than one hundred Tulsa County physicians met last month to pay tribute to Dr. W. Albert Cook, who has served in the medical profession for more than fifty years, and Dr. Pleasant P. Nesbitt. Dr. Nesbitt received the plaque in recognition of his service as past president of the Oklahoma Medical Association in 1925. Dr. Patrick H. Mayginnes, who was unable to attend, was awarded a gold medal for fifty-one years of active practice in Tulsa. Dr. Cook was the first president of the Tulsa County Medical Society, in 1907.

PENNSYLVANIA

Society News.—At a recent meeting of the Reading Eye, Ear, Nose and Throat Society, Dr. Philip R. Wiest, Reading, discussed "The Sphenopalatine Ganglion."

State Society Desires Names of Centenarians.—The Medical Society of the State of Pennsylvania, which has just celebrated its centennial, desires to share birthday honors with all residents of the state who will be 100 years old during 1949. A framed testimonial will be presented to each centenarian on his or her birthday. Those who will be 100 years old next year may write to The Medical Society of the State of Pennsylvania, 230 State Street, Harrisburg.

Philadelphia

Cancer Detection Clinic and Tumor Registry.—A cancer detection clinic was opened in Frankford Hospital November 9, the first of a network to be set in operation by the Philadelphia Division of the American Cancer Society. The purpose is to examine persons for presymptomatic cancer. Appointments may be made for examinations on Tuesday afternoons. A Tumor Diagnostic Service and Registry for Children has been established at St. Christopher's Hospital for Children in conjunction with the pediatric department of Temple University Hospital. The service is available to any hospital in the state and is made possible by assistance from the New York State Department of Health through its Cancer Fund. Gross specimens should be sent through the pathology department of the hospital. No fee will be charged by St. Christopher's Hospital, and whatever charge is made to a patient will be by the pathologist or hospital sending the specimen.

SOUTH CAROLINA

Speakers' Bureau.—The South Carolina Medical Association's Committee on Maternal Welfare is organizing a speakers' bureau, the members of which will be available not only to the committee but also to interested groups of women and to medical societies as speakers on subjects pertaining to child bearing. Inquiries should be addressed to Dr. Manley E. Hutchinson, chairman, 1412 Bull Street, Columbia. The bureau was set up to aid the association's committee which had been in operation a number of years but was discontinued during the war. Its purpose is to conduct studies in the circumstances of all deaths of South Carolina mothers and to determine what changes in treatment should be made. The South Carolina Obstetrical and Gynecological Society will cooperate in the educational program. Committee chairman is Dr. J. Decherd Guess, Greenville.

WISCONSIN

Appoint Assistant Dean.—Dr. Otto A. Mortensen, professor of anatomy at the University of Wisconsin, has been appointed assistant dean of the University of Wisconsin Medical School, Madison. He is a graduate of the University of Wisconsin Medical School, Madison, 1929, and has been on the staff of the medical school since 1930.

Course in Gastroenterology.—The University of Wisconsin Medical School, Madison, through its division of graduate medical education is presenting a five day course in gastroenterology February 14-18 at the Wisconsin Medical School, under the supervision of Dr. Karver L. Puestow and Dr. Frank L. Weston. The course will include proctoscopic and gastroscopic demonstrations, discussion of technics, parasitic diseases of the intestinal tract, food poisoning, toxemias, malignant disease, roentgen ray and surgical aspects of therapy, jaundice and its causes, along with other disorders of function and physiology. Enrolment will be limited to twelve physicians. Applications may be made to Dr. Llewellyn R. Cole, the Medical School, 418 North Randall, Madison 6.

GENERAL

Executive Director of Heart Association.—Mr. Rome A. Betts, general secretary of the American Bible Study since 1942, will become the first executive director of the American Heart Association January 1. He will be responsible to the Board of Directors for the functions of the three main administrative divisions: medical, public health and fund raising. The association and its affiliates in the major areas of the United States will conduct a nationwide campaign February 7-28, 1949, to raise $5,000,000 to combat diseases of the heart and circulation.

Multiple Sclerosis Fund.—At a luncheon of the Association for Research in Nervous and Mental Disease December 10, the National Multiple Sclerosis Society announced plans to raise a Research and Educational Fund of $225,000 for 1949. The National Multiple Sclerosis Society was founded in October 1946. Richard I. Straus, New York, is president and Dr. Tracy J. Putnam, Beverly Hills, Calif., is chairman of its medical advisory board. Offices are in the New York Academy of Medicine Building, Fifth Avenue and 103rd Street, New York 29.

Section Meetings.—The section meetings of the American Laryngological, Rhinological and Otological Society, Inc., will be held in January. The Eastern Section will meet at the Hotel Puritan, Boston, January 7. Those invited to deliver papers are Drs. Laurence L. Robbins, W. Lloyd Aycock, Conrad Wesselhoeft and John F. Enders, Ph.D., all of Boston. The Southern Section meeting will be held at the Hotel Raleigh, Washington, D. C., January 10. Invited speakers are Drs. Russell C. Grove, New York, and Edwin N. Broyles, Baltimore. University Hospital, Iowa City, is the headquarters for the Middle Section meeting January 17. Those speaking by invitation are Drs. John B. Erich, Rochester, Minn., Jerome A. Hilger, St. Paul, Minn., and Adolph L. Sahs, Iowa City. The Western Section meeting will be held in the Los Angeles County Medical Building, Los Angeles, January 29-30.

Scholarship Fund.—The Delta Gamma Fraternity has a $1,500 annual fund and a $2,000 annual loan fund from which smaller scholarship awards are available for preparation of those intending to become (1) orthoptic technicians, (2) teachers of partially seeing children or (3) specialists for blind preschool children. Any person wishing to specialize in one of these fields is eligible for assistance, the amount in each case to be determined by the particular need and costs involved. Applications may be made to Mrs. Thomas Johnson, 1235 Longfellow, Detroit 2. Applications for scholarships should be filed by March 15 for training starting in June; for training starting in the fall by July 15. Candidates are selected with the advice of a professional committee under the chairmanship of Dr. LeGrand H. Hardy, New York, of the American Orthoptic Council.

Society Elections.—The American Society of Anesthesiologists has installed Dr. H. Boyd Stewart, Tulsa, Okla., as president, and elected Dr. Rolland J. Whitacre, East Cleveland, Ohio, as president elect; Dr. Curtiss B. Hickcox, Philadelphia, and Dr. Moses H. Krakow, New York, continue as secretary and treasurer respectively.——At the recent meeting of the National Society for Crippled Children and Adults, Dr. John J. Lee, dean of the Graduate School, Wayne University, Detroit, was elected president, succeeding Colonel Elbridge W. Palmer, Kingsport, Tenn.——The American Cancer Society has elected Dr. Clifford C. Nesselrode, professor of surgery, University of Kansas School of Medicine, Kansas City, as national president; Charles D. Hilles, New York, secretary, and J. Ernest Allen, treasurer. Dr. Nesselrode has served on the society's board since the beginning of the organization.——The Mississippi Valley Conference on Tuberculosis recently chose as its president Dr. Oscar Lotz, executive secretary of the Wisconsin Anti-Tuberculosis Association.——The Mississippi Valley Trudeau Society selected Dr. Christopher J. Stringer, Lansing, Mich., president, Dr. John D. Steele, Milwaukee, Wis., president elect and Dr. Gustaf A. Hedberg, Nopeming, Minn., secretary-treasurer.

Cancer Monographs.—The American Cancer Society is planning to distribute a series of monographs written by distinguished physicians and designed to emphasize some of the more important measures that can be used by the doctor in detecting early cancer. To provide visual concepts of early diagnostic signs these 20 to 30 page brochures will be illustrated in color, and they will be uniform in format and size so that they may be conveniently incorporated into a binder. It is desired to place them in the hands of as many practicing physicians throughout the country as possible. The first, The Cancer Problem, by Dr. Shields Warren, Boston, will be ready for distribution by Jan. 1, 1949; the others will be released periodically. Titles and their authors are as follows: Head and Neck, by Hayes E. Martin, New York; Skin, by Dr. S. William Becker; Esophagus and Stomach, by Owen H. Wangensteen; Large Intestine and Rectum, by Thomas E. Jones; Larynx-Pharynx, by Chevalier L. Jackson Jr.; Thyroid, by John Pemberton; Lung, by Richard J. Overholt; Breast, by Cushman D. Haagensen; Female Pelvic Organs, by Herbert F. Traut; Genitourinary, by Victor Marshall; Soft Part Tumors, by John J. Morton, and Lymphomatous Diseases, by Lloyd F. Craver.

Board for Certification of Orthopedic Appliances.—To improve the professional standards of manufacturers of artificial limbs and braces and the fitters employed by such firms, an American Board for Certification of the Prosthetic and Orthopedic Appliance Industry, Inc., has been established in Washington, D. C. with headquarters at 336 Washington Building. Three orthopedic surgeons and four leaders in the orthopedic appliance industry constitute the national board which will grant certification. The orthopedic surgeons are Dr. Rufus H. Alldredge, New Orleans; Dr. Henry H. Kessler, Newark, N. J., and Dr. Atha Thomas, Denver. Lay members of the board are Chester C. Haddan, Denver; Lee J. Fawver, Kansas City, Mo.; J. B. Korrady, Chicago, and David E. Stolpe, New York. Mr. Haddan is president, and Glenn E. Jackson is executive director. To be qualified for certification an applicant must prove that he has had at least four years of actual experience under proper supervision or two years of special training and one year of experience. In addition, the applicant must present the signature of two physicians who state that he meets various other requirements. More than one hundred firms and two hundred fitters have already applied for certification. The medical profession has been of invaluable assistance during the two years of intensive work which resulted in the incorporation of the board.

Fellowships in Exfoliative Cytology.—The American Cancer Society has made available twenty-three fellowships in exfoliative cytology at nine of its laboratories in order to provide training in diagnostic technics for qualified pathologists. These four month fellowships will be awarded by institutions or laboratories designated by the society on the basis of past training and the intention to teach diagnostic technics to interested pathologists, clinicians and technicians. Applicants must be graduates of class A medical schools, citizens not over 50 years of age and must have completed two years of postgraduate training in pathology. Stipends will be paid in two sums: the first to the laboratory; the second to the trainee partially to cover his expenses in the amount of $140 per month in advance. Applications should be made to one of the following laboratories. The number in parentheses indicates the number of fellowships available at that laboratory. Cornell University Medical College, New York (6), George N. Papanicolaou; Jefferson Hospital, Philadelphia (6), Lewis C. Scheffey; University of Oregon Medical School, Portland (2), Warren C. Hunter; University of California Hospital, San Francisco (2), Herbert F. Traut; Michael Reese Hospital, Chicago (2), Otto Saphir; Hartford Hospital, Hartford, Conn. (2), Ralph E. Kendall; New York Post-Graduate Hospital, New York (1), Locke L. Mackenzie; Free Hospital for Women, Brookline, Mass. (1), Arthur T. Hertig; Mayo Clinic, Rochester, Minn. (1), John R. McDonald.

United Mine Workers' Welfare and Retirement Fund.—The United Mine Workers of America Welfare and Retirement Fund is concerned in the main with pensions, disability benefits, death benefits and medical, health and hospital services for members of the organization. In the last mentioned, it is the purpose of the fund to provide a prepaid form of hospital service and medical attention in all of the districts and in all local unions. Arrangements are being made to utilize present medical and hospital services under conditions which guarantee high standards of medical and hospital care and are satisfactory to the physicians, the hospitals and the fund alike. When these arrangements are completed in a given district, it will mean that the expense of medical and hospital services will be borne by the United Mine Workers' Welfare and Retirement Fund and that the members will be freed from paying a monthly amount deducted from their wages—so much a month to the hospital fund and so much a month to the doctor, as now exists in many places. It is possible that experience may demonstrate the necessity of providing additional and more specialized facilities for meeting the needs, but this will come from knowledge gained through present procedure and through the availability of funds.

The administration of the medical and hospital work is under the general direction of Dr. Warren F. Draper, former Deputy Surgeon General of the United States Public Health Service and Major General in charge of the Public Health Branch at Supreme Headquarters Allied Expeditionary Forces during World War II. He served also as State Health Commissioner of Virginia and as a member of the House of Delegates of the American Medical Association from 1925 to 1946. Medical administrative offices, each in charge of a full time physician employed by the fund and working under the direction of the Executive Medical Officer, are being established at ten locations in or near the soft coal mining areas as follows:

Denver, serving Districts 10, 15, 22, 27, Dr. William Dorsey.
Johnstown, Pa., serving District 2, Dr. Leslie A. Falk.
Pittsburgh, serving Districts 3, 5, 6, Dr. Richard F. Boyd.
Morgantown, W. Va., serving Districts 31, 16, 4, Dr. Lorin E. Kerr.
Charleston, W. Va., serving District 17, Dr. John T. Morrison.
Beckley, W. Va., serving District 29, Dr. Deane F. Brooke.
Knoxville, Tenn., serving Districts 19, 28, Dr. John D. Winebrenner.
Birmingham, Ala., serving District 20, Dr. I. Herbert Scheffer.
St. Louis, serving Districts, 12, 13, 14, 21, Dr. Cecil A. Z. Sharp.
Louisville, Ky., serving Districts 8, 11, 23, 30, Dr. Asa Barnes.

The area medical administrators, in collaboration with the physicians and hospitals in the Districts, will work out simple and satisfactory agreements for providing medical and hospital care to eligible members and their dependents. The detailed arrangements may vary to some extent according to conditions within the Districts. In the beginning the activities will be directed to the hospitalization of those who are receiving disability benefits and pensions and therefore cannot obtain services through a check-off on their wages. Included also will be United Mine Workers of America members with serious conditions for which adequate treatment facilities are not available in the localities where they live. Through this approach the area medical administrators will be able to establish procedures and train their personnel before assuming a larger work load. The program will be extended gradually as the necessary arrangements can be made.

Medical societies and leading members of the medical profession have given assurance of their desire to demonstrate the practicability of the program and make it a success. With an enterprise of such far reaching significance, it is the hope of the fund that the physicians and hospitals of this country, with the aid of their organizations, will join in an undertaking to render high standards of medical and hospital care at as reasonable cost as such quality of care could be furnished under any system that could be devised.

Marriages

Herbert Lee Wormhoudt, Cincinnati, to Miss Hazel Rebecca Durden of Fernandina, Fla., in Washington, D. C., September 4.

Frank Warren Howard, Benton Harbor, Mich., to Miss Sarah Jane Yonkman of Grand Rapids, October 2.

Edward Craig Hamilton, Mobile, Ala., to Miss Elizabeth Courtenay of Greenville, S. C., October 16.

Joseph Justin McCarthy Jr., to Miss Mary Lourdes Riley, both of Washington, D. C., October 16.

William J. Cathey, Portland, Ore., to Miss Patricia Gene Person of Veradale, Wash., October 2.

Malcolm E. Ruben, Washington, Pa., to Miss Ruth Elva Wilson in Chicago, September 4.

Lawrence J. Essember Jr., Peabody, Mass., to Miss Gertrude T. Bugler of Salem, October 2.

Charles Allen Ashley to Miss Audrey Waite, both of Bronxville, N. Y., October 9.

Lester A. Steinberg, Bridgeton, N. J., to Miss Esther Saxe of Newton, Mass., recently.

Harry Alden Wall to Mrs. Bessie Nye Mattox, both of Norfolk, Va., October 9.

Robert A. Hoffman to Miss Phyllis Strause, both of Richmond, Va., October 16.

Deaths

Charles R. Robins, Richmond, Va.; born in Richmond, Dec. 31, 1868; Medical College of Virginia, Richmond, 1894; professor of gynecology at his alma mater from 1907 to 1938, when he became emeritus professor; member of the founders group of the American Board of Surgery; member of the Southern Surgical Association, of which he had been vice president, Tri-State Medical Association of the Carolinas and Virginia, American Medical Association and the South Atlantic Association of Obstetricians and Gynecologists; past president of the Richmond Academy of Medicine; fellow of the American College of Surgeons; served during World War I; member of the school board; formerly director of the State Planters Bank and Trust Company; a founder and for many years president of the board of directors of the Stuart Circle Hospital; affiliated with the Retreat for the Sick and the Sheltering Arms Hospital; past president of the Rotary Club; died October 16, aged 79, of coronary sclerosis.

Horace Gilbert Smithy Jr., Charleston, S. C.; born in Norfolk, Va., July 19, 1914; University of Virginia Department of Medicine, Charlottesville, 1938; assistant professor of surgery at the Medical College of the State of South Carolina; specialist certified by the American Board of Surgery; served an internship and residency at the Roper Hospital, where he was a fellow in surgery; member of the American Medical Association; fellow of the American College of Surgeons; is said to have performed the first successful heart valve operation; surgeon at Roper Hospital, where he died October 28, aged 34, of aortic stenosis.

Bernard Philip Conway, Chicago; Chicago College of Medicine and Surgery, 1914; member of the American Medical Association; received the Croix de Guerre and the Purple Heart for bravery in action during World War I; formerly chief surgeon for the Hartford Accident and Indemnity Company of Hartford, Conn., whose examiner he has been for over thirty years; since 1942 supreme medical examiner and a member of the managing committee of the Royal League; died in the Presbyterian Hospital November 4, aged 61, of bronchopneumonia following an operation.

Francis Marion Bair, Cuba City, Wis.; Baltimore University School of Medicine, 1899; member of the American Medical Association; died September 25, aged 74, of endocarditis.

Samuel Edward Ballard, Long Beach, Calif.; Baltimore Medical College, 1899; member of the American Medical Association; on the staff of the Community Hospital; died September 20, aged 74, of coronary occlusion.

Louis C. Bauman ⊕ St. Joseph, Mo.; Central Medical College, St. Joseph, 1904; an Associate Fellow of the American Medical Association; past president of the Buchanan County Medical Society; died in Rochester, Minn., September 15, aged 73, of hypertrophy of the prostate and parkinsonism.

George Lewis Cable, Denver; Starling Medical College, Columbus, 1897; died recently, aged 75.

George William Carson, St. Louis; Barnes Medical College, St. Louis, 1901; died October 22, aged 70, of pneumonia.

Edwin James Cauffield, Akron, Ohio; Cleveland University of Medicine and Surgery, 1895; for many years on the staff of City Hospital, where he died October 8, aged 76, of toxemia.

Edgar Boykin Clark ⊕ Philadelphia; Meharry Medical College, Nashville, Tenn., 1928; died recently, aged 46.

Leonard Easton Claydon ⊕ Red Wing, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1895; died August 15, aged 79, of chronic bronchiectasis.

Samuel Walter Cottle ⊕ Morgantown, W. Va.; University of Louisville (Ky.) School of Medicine, 1925; died October 31, aged 49, of a head injury sustained in a fall.

Joseph Francis Cusick, Binghamton, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1931; member of the American Medical Association; an officer during World War II; served on the staffs of Our Lady of Lourdes Memorial Hospital and Binghamton City Hospital, where he died October 13, aged 41, of peptic ulcer with massive gastric hemorrhage.

Frank E. Dawson, Detroit; Meharry Medical College, Nashville, Tenn., 1917; member of the American Medical Association; died October 12, aged 70, of carcinoma of the stomach.

Persis F. Elfeld ⊕ Wilmington, Del.; University of Illinois College of Medicine, Chicago, 1923; member of the American Psychiatric Association; for many years associated with the Delaware State Hospital in Farnhurst; died recently, aged 50, of heart disease.

Ray Eugene Persons ⊕ Cairo, N. Y.; Albany (N. Y.) Medical College, 1916; past president of the Greene County Medical Society; president of board of education; director of the First National Bank; chief of staff, Memorial Hospital of Greene County, Catskill; died September 29, aged 57, of carcinoma.

James Hardy Pittman, West Palm Beach, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; member of the American Medical Association; formerly associated with the U. S. Public Health Service; affiliated with Good Samaritan and St. Mary's hospitals; died September 23, aged 75, of uremia.

Wayne S. Regar, Ephrata, Pa.; Medico-Chirurgical College of Philadelphia, 1907; member of the American Medical Association; died October 3, aged 76, of injuries received in an automobile accident.

William Reid, Deerwood, Minn.; Trinity Medical College, Toronto, Canada, 1892; died in Grand Rapids, September 9, aged 82, of carcinoma of the colon.

Ella N. Ritter, Williamsport, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1893; member of the American Medical Association; died in Darlington Sanitarium, West Chester, September 30, aged 82.

Howard Royer, Grand Island, Neb.; University of Nebraska College of Medicine, Omaha, 1930; member of the American Medical Association; served overseas in the medical corps of the U. S. Naval Reserve during World War II; affiliated with St. Francis and Lutheran hospitals; died October 15, aged 43, of chronic nephritis and uremia.

Charles Bradley Russell ⊕ Paterson, N. J.; Harvard Medical School, Boston, 1904; served during World War I; affiliated with the New Jersey Orthopedic Hospital, Orange, Nathan and Miriam Barnet Memorial Hospital and St. Joseph Hospital, where he died October 26, aged 72, of coronary thrombosis and carcinoma of the bladder.

Morris Samsky, Brooklyn; Long Island College Hospital, Brooklyn, 1912; died in October, aged 59.

John Theodore Schlesselman, Mankato, Minn.; Cleveland University of Medicine and Surgery, 1897; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with St. Joseph's and Immanuel hospitals; died September 6, aged 71, of coronary thrombosis.

Cyril Evan Sheppard ⊕ Larned, Kan.; University of Kansas School of Medicine, Kansas City, 1914; during World War I served in the medical corps of the U. S. Army; for two terms mayor of Larned; affiliated with St. Rose Hospital in Great Bend; died September 14, aged 63, of myocardial infarction.

Korah Ellis Sherrill, Fulton, Mo.; Barnes Medical College, St. Louis, 1911; member of the American Medical Association; died September 4, aged 75.

William Smith Shimer, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1886; served during World War I; affiliated with St. Mary's and Stetson hospitals; died September 19, aged 82, of cardiovascular renal disease.

Jay Dow Shively, Clinton, Mo.; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1900; died September 9, aged 77, of intestinal obstruction.

Robert Armstrong Smith, Ghent, Ohio; McGill University Faculty of Medicine, Montreal, Canada, 1897; veteran of the Spanish-American War; died in the People's Hospital, Akron, September 30, aged 78, of bronchopneumonia and cholelithiasis.

Wesley Munger Thomas ⊕ Westville, Ind.; Chicago Homeopathic Medical College, 1895; formerly on the staffs of Ravenswood and St. Luke's hospitals in Chicago; died October 21, aged 80, of cerebral hemorrhage.

Albert Lycurgus Victor ⊕ Washtucna, Wash.; Marion-Sims College of Medicine, St. Louis, 1899; member of the Oregon State Medical Association; died in a hospital at Pendleton, Ore., September 17, aged 79, of cerebral hemorrhage.

R. W. Waldrop ⊕ Bessemer, Ala.; Louisville (Ky.) Medical College, 1896; fellow of the American College of Surgeons; owner and chief surgeon at the Bessemer General Hospital; died in Rochester, Minn., October 11, aged 74, of coronary occlusion.

Fernando A. Ward, Suffolk, Va.; Medical College of Virginia, Richmond, 1899; member of the American Medical Association; died October 9, aged 73, of Hodgkin's disease.

Frederick Stockton Watson ⊕ Trenton, N. J.; Medico-Chirurgical College of Philadelphia, 1907; for many years on the staff of the Mercer Hospital, where he died September 15, aged 65, of coronary thrombosis.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Nov 20, 1948.

Treatment of Obstinate Eczema by Duodenal Intubation

P. Delore has presented to the Medical Society of the Lyons Hospital 21 cases of eczema treated by daily duodenal intubation. The patients had suffered for a long time from generalized eczema resisting all other treatment. The authors did not find any common stigma, but noted diabetes in 6 cases, obesity in 6 cases, slight hepatobiliary disorders in 3 cases and hypercholesterolemia in 1 and in 1 case hyperuricemia. They performed an average of twelve consecutive intubations and observed a remarkable sedative action on the pruritus in all cases. In 2 cases the eczema rapidly disappeared, and in 14 cases there was partial or temporary improvement In 5 cases there was no improvement.

The author believes that the cholagogue effect of the intubation, and, through it, a favorable action on hepatic function explain the good results. He advocates this treatment in all resistant eczemas. H. Thiers, Racouchot and Tholot presented at the same meeting their observations on this treatment. They did duodenal intubation in order to find out latent vesical disorders by the study of the bile in a patient suffering from generalized exudative eczema. The bile was found to be normal or thick containing no formed elements, or microscopically slightly purulent, but with a negative culture. The results from repeated intubations were on the whole favorable. Complete recoveries were more infrequent but were obtained in patients with a slightly purulent bile; some complete failures were experienced; patients with a thick bile have been especially improved. In the discussion, Professor Gate showed interest in this new treatment of obstinate eczema.

Inquests on Cancer

In 1943, the National Institute of Hygiene (Cancer Section) set up a permanent enquiry on cancer in order to centralize all the documentation concerning this disease. It has just issued a statement showing that it succeeded in collecting, to date, 20 per cent of the cases occurring each year in France; 10,000 cases are taken up by anticancer centers, 2,000 cases by hospitals not specializing in the treatment of cancer, and 2,000 by the Social Security Service. Thanks to a specially organized social service, keeping in contact with patients has improved. In order to obtain the maximum of documentation the permanent enquiry has been extended to Africa. Interesting data have been collected on the comparison of cancer in white persons and in Negroes of other continents. For example, primitive cancer of the liver represents 35 per cent of recognized and histologically verified cancers among the Negroes of other continents, whereas in France it represents 0.5 per cent only. Conjunctival tumors appear to amount to 19.5 per cent, a proportion also much higher than in white persons. On the other hand, an enquiry on the eventual relation of cancer and heredity has been started. A French *département* (district) has been selected for the establishment of a genealogic index in which all the families will be inscribed and in which all births and deaths (those due to cancer being specified) are to be recorded; a minimum of three generations will be necessary to give information on this problem. A special bibliographic service, including all the world literature on cancer, has been organized.

ITALY

(From Our Regular Correspondent)

Naples, Nov. 15, 1948.

Nanism As An Aftermath of War

In the aftermath of diseases of the last war a noteworthy increase has been recorded in the incidence of Fröhlich's syndrome, and, above all, in the large number of dwarfs. Nanism, or any serious retardation of growth, often represents an enigma. Greenblatt, professor of endocrinology at the Georgia School of Medicine in Augusta, has divided nanism into the genetic, hypohormonal and hyperhormonal types and has subdivided the genetic type into proportionate and disproportionate; the hypohormonal type into hypothyroid, hypopituitary, hypogonadal and diabetic, and the hyperhormonal type into hypergonadal and hypercorticosteroid.

The anterohypophysial region is involved in the majority of cases of nanism. However, if detailed roentgenographic examination in various projections of the sella turcica or pituitary fossa is done, no specific changes may be observed in the majority of cases, except in cases of cysts with calcification. The same applies to the obscure relation between alimentation and nanism in cases of secondary infantilism. No doubt, deficiency of nutritive elements which are hormonic stimulants affects the stature of persons by delaying growth and development, as was demonstrated by results of food shortages during the last war, but there must be other factors which aggravate the effects of a deficient diet until it determines the anterohypophysial reaction. Whatever the mechanism may be, poor results follow present methods of treatment. The director of the Radiologic Institute of the University of Naples, Professor Mario Bertolotti, at a conference at the Medicophysical Academy of Florence and in another at the University of Naples, has demonstrated, that a large percentage of patients sent to him for endocrine disturbances attributed to the hypophysis, showed definite manifestations of serous meningitis rather than pituitary lesions. Serous meningitis was demonstrated in all forms of adiposogenital dystrophy, nanism and gigantism of genitals in the absence of any increase in body size.

MENINGITIS IN THE ABSENCE OF CLINICAL SIGNS

When members of the family of children with serous meningitis were interviewed, their answers always were negative with regard to an occasional infirmity of the meningeal type. The meningitis had a silent course, without any sign of meningism, or with signs which were definitely unappreciable (mild headache or temporary gastric disturbances). According to Bertolotti, this serous meningitis is responsible for inflammatory reactions of short duration which involve the entire diencephalohypophyseal system. These reactions are instrumental to a functional disturbance of the diencephalohypophyseal system, although they do not determine anatomic lesions which might cause deformation of the sella turcica or of the hypophysis demonstrable on roentgenographic examination. The signs of insufficiency may be followed by endocrinopathic repercussions of various importance: from nanism, which formerly has been defined generically as infantilism, to the syndromes of pseudo Fröhlich type.

What is the origin of this meningitis? Bertolotti has no doubts that it is an adenoid complication in the ethmoidal nasal region. Little by little the adenoid syndrome increases in children compelled to live inadequately with regard to dietetics and climate (effects of air warfare), until it assumes the form of a clinical entity which on roentgenographic examination may be revealed as chronic posterior ethmoiditis or ethmoidosphenoiditis. The author has roentgenographic documents of hundreds of cases with manifestations of alterations concerning the structure of the sinuses, and in the near future there will be published a volume by a pupil of Bertolotti, who is the head of the most frequently quoted school of roentgenology of the skull in Italy.

PRACTICAL CONCLUSIONS

Bertolotti, who adheres to the clinicoradiologic management of the American School of Cushing, emphasizes that the ethmoiditis may escape detection, because it is submerged in the general picture of extensive adenoidism. In the controversies concerning the sequelae of the removal of the tonsils and adenoids in the genital sphere, the point of view of Bertolotti, which reveals a link between adenoidism as a sequela of ethmoiditis and anterohypophysial disturbances, deserves consideration. According to Bertolotti, it is necessary to act first concerning the latent serous meningitis in order to prevent the dangerous repercussions in the diencephalohypophyseal system. Lumbar puncture may be performed to attenuate the hypertension of the cerebrospinal fluid, or other therapeutic measures which the clinical surgeons may consider advisable may be resorted to. Treatment should be directed at the adenoidism and at the insidious manifestations of the ethmoiditis before it becomes chronic, involving the hormones. Bertolotti postulates continuous roentgenographic observations of the skull of all children with signs of adenoidism and mild manifestations of sinusitis and ethmoiditis. Lumbar puncture directed at the incipient meningitis may be much more effective than the customary opotherapeutic measures, particularly in cases in which there may be functional disturbances of the anterohypophysis or of the hypothalmus.

MADRID

(From Our Regular Correspondent)

Oct. 26, 1948.

Congress on Obstetrics and Gynecology

The Second Portuguese-Spanish Congress on Obstetrics and Gynecology was held in Lisbon May 2-8, 1948. Drs. F. Luque Beltrán of Madrid and Novais Esousa of Coimbra were presidents. The President of Portugal, the Embassador of Spain in Lisbon and the Ministers of State and of National Education of Portugal were present at the first session. The official topics on May 2 and 3 were: "The human embryo in the first few weeks," by Prof. Dr. Celestino da Costa; "History of Establishment of the Alfredo Costa Maternity," by Prof. Dr. Carbalho Dias; "Physiology of Menstruation," by Prof. Dr. C. Botella Llusia, of the Faculty of Medicine of Madrid, and "General Conception and Nomenclature of Changes in Menstruation," by Prof. Dr. M. Usandizaga Soraluce. The topics were interesting and the discussions which followed were important.

The official topics on May 4 were: "Chemotherapy and Antibiotic Therapy in Puerperal Infection," by Dr. Albertino de Barros; "The Stillborn from Obstetric and Legal Points of View," by Dr. Macau Moncanut; "Physiopathologic Aspects of Fetal Respiration," by Dr. Silva Nuñes; "Need of an International Concept for Determination of the Stillborn," by Dr. Amaral Pyrrait.

The whole session on May 5 was given to the problem of cancer. Official topics were: "Therapeutic Orientation on Carcinoma of Female Genital Organs," by Prof. Dr. J. García Orcoyen of the Faculty of Medicine of Madrid, and "Conduct Followed in Therapeutics of Cancer at the Instituto Portugues de Oncologia." There were also receptions and other festivities.

The congress resolved (1) to appoint a committee for uniformity of Nomenclature Concerning Menstrual Changes; (2) to request from the governments of both countries agreement on the Concept of the Stillborn; (3) to stimulate elevation of the educational level of midwives practicing in rural zones; (4) to increase the number of beds in obstetric hospitals for women of moderate economic means; (5) to establish and follow social and legal crusades against criminal abortion; (6) to give impulse and strength to social campaigns for investigation of and work against cancer, and (7) to hold the Third Spanish-Portuguese Congress at Barcelona, Spain, in 1950, with Prof. Dr. Lubiola of the Faculty of Medicine of Barcelona, the chairman, and Profs. Drs. Conill, Garriga Roca and Morais Ferias vice president, secretary and chairman of the Portuguese committee, respectively.

University Professors Appointed

The following professors have been appointed during this year: Professor of obstetrics and gynecology on the Faculty of Medicine of Madrid, Dr. J. Botella Llusia and on the Faculty of Valencia, Dr. F. Bonilla Marti; professor of physical therapy on the Faculty of Barcelona, Dr. V. Carulla Riera; professor of pediatrics and puericulture on the Faculty of Santiago, Dr. M. Suarez Perdiguero, and on the Faculty of Granada, Dr. A. Galdo Villegas; professors of descriptive anatomy and of anatomic technics on the Faculty of Salamanca, Drs. L. Jiménez Gonzales and J. L. Puente Domínguez. Professor of general histology and of pathologic anatomy on the Faculty of Santiago de Compostela, Dr. J. L. Arteta Algibez, and on the Faculty of Cadiz, Dr. D. Ferrer y Fernández de la Riva; professor of general pathology and clinical propedeutics on the Faculty of Santiago, Dr. A. Aznar Reig, and on the Faculty of Cadiz, Dr. F. Díaz González and professor of general and special physiology on the Faculty of Santiago, Dr. R. Domínguez Sánchez.

Lectures

Lectures were given at the Colegio Provincial de Médicos of Baleares in April by Prof. Dr. A. Pedro y Pons, on "Differential Diagnosis of Jaundice"; Prof. Dr. Piulachs, on "Minimal Picture of Acute Abdomen"; Dr. P. Barcelo Torrents, on "Painful Shoulder"; Dr. A. Rocha, on "Preoperative Treatment of Diseases of Digestion"; Dr. C. Perez Vitoria, on "New Antithyroid Medications," and Dr. M. Estevez, on "Psychosomatic Medicine."

Congresses

The Seventh National Congress of Pediatrics will be held at Sevilla on May 1949, under the chairmanship of Dr. Saiz de los Terreros.

The second meeting of the Sociedad Internacional de Gastroenterología will be held at Spain in 1950, under the chairmanship of Dr. Gallart Mones of Barcelona.

Personals

Dr. L. García Tornell was recently appointed member of the Real Academia de Medicina of Barcelona. His speech of entrance to the Academia was on "Surgery in Spain in the Nineteenth Century."

Dr. P. Lain Entralgo, professor of the history of medicine at the University of Madrid, recently lectured in various South American countries. He was appointed honorary professor on the Faculty of Medicine of Chile and honorary member of the Society of Neurology and Psychiatry of Chile.

Professor Dr. G. Marañón, of Madrid, was recently appointed member of the Academia de las Ciencias at Lisbon.

Correspondence

SALICYLATE THERAPY IN RHEUMATIC FEVER

To the Editor:—I read with interest the editorial in The Journal, October 2, page 367, on the subject of "Salicylate Therapy in Rheumatic Fever." In this connection, you quote Coburn's work (Coburn, A. F.: Salicylate Therapy in Rheumatic Fever, *Bull. Johns Hopkins Hosp.*, Dec. 1943, pp. 435-464). If verified, such results would indicate a good method of treating rheumatic fever. However, an analysis of his results casts reasonable doubt on the validity of the conclusions. It is because this subject is such a vital one, and not in order to detract from the value of the work published, that the following considerations are brought forward.

1. In presenting the results, the criteria for determining cardiac damage are not described. The follow-up period seems to be too short to determine adequately the ultimate effect of the acute rheumatic episode or of the treatment, for pathologically demonstrable valvular heart disease may not appear until several years after the acute rheumatic attack. In reading the statement that in 16 of 19 patients with polycyclic attacks mitral valvular disease developed, one wonders how the presence of valvular disease can be noted so soon after the acute episode, unless there was previous valvular damage, for the preliminary group was studied in 1942, and the results published in 1943. Similarly, the statement that a patient escaped clinical signs of heart disease does not necessarily indicate the ultimate effect of the rheumatic episode in the more recently treated group.

2. The criteria for classifying the attacks as severe or mild are not presented. Further, the severity of such an attack need not be related to the subsequent appearance of rheumatic valvular heart disease, for there is a large group of patients with marked rheumatic valvular heart disease from whom no history of an acute rheumatic episode can be elicited.

3. Analysis of the results does not justify enthusiastic conclusions as to the efficacy of the method of treatment presented. In describing the treatment of 12 patients with infusions of 10 Gm. of sodium salicylate daily (preliminary group 3), it is stated that "without exception the sedimentation rates fell progressively and were normal or approaching normal after fourteen infusions." Study of the results listed in table 1 shows that, although all the sedimentation rates were approaching normal, by the fourteenth day of such treatment the sedimentation rates of only 2 patients were 19 or less, and those of 10 patients were 20 or more, of which 4 were 40 or more.

4. In the largest group, consisting of 58 patients, of whom 40 were selected to be reported, massive dose salicylate therapy in group 1 (20 patients) resulted in all of the sedimentation rates becoming normal in fourteen days or less. However, these patients had had elevated sedimentation rates for an average period of forty days before such treatment, thus making a total of sixty-three to forty-nine days before normal levels were reached. This does not seem significantly different from the results described in preliminary group 1, in which 19 patients with polycyclic attacks who were supposedly receiving inadequate salicylate dosage had elevated sedimentation rates for an average of nine weeks.

These points serve to emphasize the need for further observation and study of the effect of salicylate treatment of acute rheumatic fever before salicylates are recommended as a curative measure rather than as a means of achieving purely symptomatic relief.

Sidney Scherlis, M.D.
Baltimore, Md.

TOXICITY OF HEXACHLOROCYCLOHEXANE IN SCABIES

To the Editor:—Recent contributors to The Journal found hexachlorocyclohexane to be an effective and safe treatment for scabies even when spread on and rubbed into the entire cutaneous surface of the body in a vanishing cream base (Canon and McRae, The Journal, Oct. 23, pp. 557-560). Before this mode of treatment is accepted it seems that consideration should be given to the fact that recent experiments not cited by these authors show that both oily (Horton, Karel and Chadwick, *Science*, March 5, pp. 246-247) and aqueous (personal communication from Dr. Garner, U. S. Department of Agriculture Animal Research Department, Beltsville, Md., on work done by Department of Agriculture research workers at Kerrville, Texas) solutions of hexachlorocyclohexane can be fatal to rabbits and other animals by cutaneous absorption alone.

In addition to the possibility that hexachlorocyclohexane may be toxic on cutaneous absorption consideration should be given to its possible toxic effect on man and animals when used as an insecticide. This year for the first large scale use of hexachlorocyclohexane thousands of tons of insecticide dust containing this substance as its most potent component were dusted by plane or tractor on cotton fields throughout the South in an effort to control the boll weevil. My attention was first drawn to the possible toxic properties of this dust after the convulsive death of a child who lived but 100 yards from an insecticide mixing plant. This mixing plant in an effort to protect its workers had installed exhaust fans which blew out into the surrounding air spillage of dust incurred in the bagging process of the insecticide mixture containing hexachlorocyclohexane.

After the convulsive death of this child search of the literature revealed that hexachlorocyclohexane does characteristically cause a convulsive death when experimentally fed to (Furman, *J. Econ. Ent.*, vol. 40, p. 518, 1947) or injected into (*J. Pharmacol. & Exper. Therap.*, February, pp. 140-146) animals. It was noted also that, although there was widespread dusting of cotton fields throughout the South with this mixture containing hexachlorocyclohexane and although there was resultant inhalation of the mixture by thousands of animals and human beings, there is as yet no controlled inhalation experiment on hexachlorocyclohexane in the medical literature (a search for an article on inhalation was made by the staff at Army Medical Library, Washington, D. C.; one European report was found and no toxicity reported, but these animals were exposed for but a short period), nor does questioning of experts in public health research reveal that any such experiment is now being made (personal communications from executive heads of governmental and private agencies closely associated with insecticide research).

Further evidence of the toxicity of this chemical is seen in the fact that 6 rabbits placed at the aforementioned insecticide plant and exposed to the dust lost in the normal working process of the plant all died during the second week of exposure. In addition, a personal survey of farms in different areas of North and South Carolina revealed reports of convulsive death in cows, pigs, mules, dogs and chickens (e. g., 5 cows died at Lumber Ridge, N. C., 7 pigs at Clio, S. C., and 100 chickens at Maxton, N. C.) after this insecticide containing hexachlorocyclohexane had been dusted on nearby cotton fields from planes.

In conclusion, would it not seem that further work is indicated on hexachlorocyclohexane before it is to be considered adapted for unrestricted use either as an insecticide or as a cure for scabies?

Robert F. Mobbs, M.D.
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Medical Economics

HEALTH AND SOCIAL SECURITY

MORRIS FISHBEIN, M.D., Editor
The Journal of the American Medical Association

Fifteen years have passed since Harvey Cushing wrote one of his most important essays, entitled "Medicine at the Crossroads."[1] Now, in 1948, the forces of medicine are assembling at a point of decision which may well determine the nature and the freedom of medical practice for many years in the future.

The 80th Congress, which was harshly criticized by the President in his campaign speeches because of its failure to enact some legislation which he favored and for enacting other legislation which he did not favor, paid much attention to problems of health and medical care. Extensive hearings were held on both the Taft-Smith-Ball-Donnell bill, which proposed to advance medical science by the well established principle of federal grants to the individual states, and the Wagner-Murray-Dingell bill, which would establish a nationwide system of compulsory sickness insurance.

Few persons realize how greatly our federal government enters into the care of the sick under existing legislation. In 1948 the federal government assumed the total cost of approximately $6,000,000,000 for medical, hospital, educational and welfare needs of veterans. Benefits were paid to more than 2,000,000 persons under the old age and survivors' insurance program.

The 80th Congress passed a bill providing for increased cardiovascular research, improvement and expansion of heart disease detection and diagnostic services and training of workers in research and in matters relating to the diagnosis, prevention and treatment of heart diseases. For the year commencing July 1, 1948, the Congress voted $3,144,088 for this purpose.

The National Dental Research Act was passed for approaching the dental problem in a similar manner, and law authorizes an annual appropriation of $750,000 toward dentistry.

A further expansion of the national mental health program was approved, and grants-in-aid for community mental health services were increased to $3,550,000 annually. Research and training grants were increased to $2,000,000, and smaller increases for work of the Public Health Service in this field were approved.

The 80th Congress voted about $175,000,000 for the control of venereal diseases, tuberculosis control, general public health work, control of communicable diseases, the National Institute of Health, cancer research and control, a hospital construction program, the construction of a medical research center, maternal and child services and services for crippled children.

Other important bills, which were considered but not passed, included federal aid to the states in providing full time public health services, federal aid for school health services and for the treatment of physical and mental defects in conditions of school children, federal aid for providing various expensive drugs and medical services, federal aid for research and training in poliomyelitis and a bill to create a national science foundation.

Also reported favorably to the Senate was a bill to create a Department of Health, Education and Security to supersede the present Federal Security Agency. No action was taken on this bill because there should be available soon a report of a bipartisan commission under ex-President Herbert Hoover which is studying and preparing plans for reorganization of the federal government. This commission will recommend not only structural changes but will also make recommendations on functions of various departments in the light of their cost, their usefulness, their limitations and their curtailment or elimination.

The Social Security Act of the United States provides for cash indemnity to meet the hazards of old age and unemployment and for funds granted to the individual states to be applied in the field of health. The latest reorganization was that of 1946. The programs involved include old age and survivors' insurance, unemployment insurance and public assistance. The latter provides old age assistance, aid to dependent children and to the blind, maternal and child health services, services for crippled children and child welfare services. The benefits under the Act as far as old age is concerned are not available to large classes of workers, including agricultural labor, domestic service in private homes, local governments, employment by religious, charitable, educational and scientific organizations not for profit and similar groups. Railroad employment is covered by the Railroad Retirement Act. The unemployment insurance is administered by the states with federal cooperation.

Under the program for public assistance the federal grants are made to the states to aid them in giving financial assistance to certain groups of needy persons. The state plan must meet requirements set forth in the Social Security Act.

In June 1947 more than 4,000,000 persons were receiving public assistance, of whom 3,300,000 were on the program under the Social Security Act. The expenditures amounted to almost one and one-half billions of dollars.

For maternal and child health and welfare the Social Security Act authorizes federal grants to the states to extend and improve their health and welfare services for mothers and children, especially in rural areas suffering from economic distress. In 1946 the grants were $11,000,000 for maternal and child health services, $7,500,000 for services for crippled children and $3,500,000 for child welfare services. In addition, the states must supply $5,500,000. During 1946 medical services were given to 129,000 women at prenatal clinics and to 456,000 infants and preschool children at child health conferences. Medical health supervision was provided for 1,600,000 school children by state health authorities. Public health nursing service was given to 231,000 expectant mothers and to 952,000 infants and preschool children. Almost 4,000,000 children were immunized against infectious diseases, and 1,143,000 children received dental inspection. In addition to the $7,500,000 given by the federal government for services for crippled children, the states must supply $3,750,000. Thus the funds expended in the field of health under the Social Security Act approximate $35,000,000 to $40,000,000 annually.

The Senate Committee on Finance recently received its third report from its Advisory Council on Social Security under the chairmanship of Edward R. Stettinius Jr., this one covering public assistance. Over a period of twelve years public assistance programs ranged from a high of $472,000,000 in 1938 to $85,500,000 in 1944. During 1947 expenditures for general assistance from the state and local funds amounted to $164,000,000. Under present economic conditions the committee estimated that the annual cost to the federal government would approximate $75,000,000 for assistance payments and $15,000,000 for administrative expenses. Among the suggestions made by the Advisory Committee as concerned medical care, the committee recommended that the federal government should participate in payments made directly to agencies and persons providing medical care as well as in money payments to recipients. They suggest that the federal government should pay one-half the medical care costs incurred by the states above the regular maximums of $50 a month for the recipient but should not participate in medical costs above the regular maximums.

They also recommended that state public assistance agencies should be required to submit their plans to the Social Security Administration for its approval, setting forth the conditions under which medical needs will be met, the scope and standards of care, the methods of payment and the amount of compensation for medical care.

Most of the states are now financing the medical care they provide from state and local funds. Since the states with comparatively meager resources cannot spend funds without federal matching, these states provide little or nothing for medical care. Moreover, it is said that in almost all states the medical care provided under this program is inadequate.

One paragraph of the report merits emphasis. They suggest that medical care for assistance recipients should be provided under arrangements that afford the assistance agency flexibility in establishing policies and procedures. "It is frequently desirable to let recipients make their own arrangements for medical services. On the other hand, there are many circumstances in which the assistance agency finds it preferable to pay the doctor or other supplier of medical care directly." Again they emphasize, "Choice could be made of the best way to make medical care available to a recipient in his particular situation."

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[1] Cushing, H.: Medicine at the Crossroads, J. A. M. A. **100:** 1567 (May 20) 1933.

The report indicates, "Recipients of old age assistance have an average age of 75 years and have great need of medical services." Like other persons of advanced age they are particularly subject to chronic diseases. One third of the recipients of medical care for dependent blind persons are 65 years of age or over. These persons have other infirmities besides blindness. About one fifth of the recipients are blind as a result of cataract, which, it is suggested, might have been corrected by surgical treatment. More than one tenth of the recipients suffer from glaucoma.

Another recommendation suggests that the federal government should participate in payments made to or for the care of old age assistance recipients living in public medical institutions other than mental hospitals. "To receive federal funds to assist old people in medical institutions under either public or private auspices," says the report, "a State should be required to establish and maintain adequate minimum standards for the facilities and for the care of persons living in these facilities. These standards should be subject to approval by the Social Security Administration." The Advisory Council feels that care for aged and chronically ill persons is a growing problem and in the opinion of the Council is a federal concern. Today more than 350,000 recipients of old age assistance are bedridden or so infirm as to need help in eating, dressing and getting about indoors. Some 50,000 of these are living in commercial boarding or nursing homes or private institutions, and many are getting unsatisfactory care.

Since the passage of the original Social Security Act in 1935 the number of persons aged 65 and over has increased from 8,000,000 to nearly 11,000,000. Moreover, it is estimated that another 25 years will double the number of persons over 65 years of age. Investigators found that needy persons without additional resources are allowed $50 a month. In Connecticut in 1946 the average cost of nursing home care for aged persons was $118 a month.

Another recommendation of the Advisory Council on social security suggests that a commission should be appointed to study current child health and welfare needs and to review the programs operating under title V of the Social Security Act, relating to maternal and child health services, services for crippled children and child welfare services. The Council recognizes that these problems can be approached from several different points of view. The question is asked, "Should necessary health and welfare services be provided to all children and mothers or should they be limited to those whose families cannot afford to pay for the services?" They ask, "Is the present scope of maternal and child health and welfare services sufficiently broad or should new services be instituted?" And then they inquire, "Should new or expanded services be supplied by governmental agencies, by voluntary agencies or by both acting together?"

The health needs which the Children's Bureau feels are most urgent are:

1. Inadequate health services for both mothers and children; these services are lacking in many areas, particularly in rural communities.

2. Rheumatic fever; some 500,000 children are suffering from rheumatic fever.

3. Premature birth; some 150,000 infants are born prematurely each year.

4. Lack of dental care; some 20,000,000 children are in urgent need of dental attention.

5. Cerebral palsy; between 100,000 and 160,000 children have cerebral palsy.

6. Physical and mental defects; many children of school age lack provision for medical examinations and for the correction of handicapping conditions found.

7. Inadequate supply of professional personnel; nearly all parts of the United States lack a sufficient number of pediatricians, public health nurses and medical social workers to provide adequate health services for children.

This then is the status of social security in the United States, particularly from the point of view of health, on the eve of the convening of a new Congress and the taking of office by a reelected president.

Strangely, an acceptable statement on the condition of health and medical care in the United States at this time is not easily available. Most sound of all of the statements thus far published was the report of the Brookings Institution to the Senate Committee headed by Senator Alexander Smith. Yet shortly after the publication of this report the propagandists for compulsory sickness insurance refused to accept its facts, figures and conclusions and issued a document in opposition. Presumably the report to the President by Oscar R. Ewing entitled "The Nation's Health," issued in September 1948 after a week of conferences in Washington, should offer an acceptable statement. Yet it comes far indeed from being anything resembling a scientific document. Those who understand the nature of these governmental performances were not astonished at the result. Almost from the first it was apparent that Mr. Ewing was stacking his executive committee. When that condition was corrected, Mr. Ewing made it clear that he would in any event recommend compulsory sickness insurance. What came forth was a shrewdly contrived document, designed to break down the confidence of the American people in their medical care and pointing repeatedly to compulsory sickness insurance as the cure for the misrepresentation that the document sets forth. A peculiar folly is the suggestion that every state should have a medical school and a medical center around the school. That type of broad generalization could have been made only by someone totally lacking in a knowledge of medical education and its problems. It will take far more than ten years to accomplish that objective.

The report says that a scant 20 per cent of our people are able to afford all the medical care they need—and this in a nation with the highest standard of living of any nation in the world. Who determines how much medical care people need? What kind of medical care meets the needs of the American people? We have in the United States some 200,000 physicians, 16,000 chiropractors and 7,000 or 8,000 osteopaths, with perhaps 15,000 or 20,000 more nondescript healers of every type from faith healing to the utilization of electric gadgets. How much could be saved by the elimination of this borderline quackery? Bear in mind that no other nation in the world is subject to the amount of medical quackery that we seem to tolerate and support.

The report says that 30 per cent of American families with incomes between $3,000 and $5,000 would have to make great sacrifices or go into debt to meet the costs of a severe or chronic illness. How many of these families go into debt to purchase motor cars, furs, jewelry or other luxury items? The cigaret bill of the nation rose from 10 billion cigarets in 1915 to 350 billion cigarets in 1945. Many an American family spends over $180 a year on tobacco. Certainly individual planning in a democracy is just as important as government planning. Many a family fails to plan for medical care, but finds itself quite efficient in planning for other purposes, like radio, television, motion pictures, football games and similar amusements. The bill for sports and pastimes in the United States far exceeds the bill for medical care. Yet Mr. Ewing comes to the ultimate conclusion in which he says, "I have reached the considered conclusion that more extensive and efficient nationwide planning is the only effective way to accomplish a significant betterment in national health."

When the last Congress adjourned, a committee was established to report in March 1949 on legislation in the field of medical care. No doubt additional hearings will be held, and conceivably the Congress may find a means to encourage federal aid to help in solving at least in part our medical problem.

Fundamental to every advance in the field of medical care is the quality of medical education. American medical education is today the best in the world. Medical education in the United States includes the voluntary contributions to medical teachings of great numbers of American physicians who recognize that the dissemination of medical knowledge to future generations is basic to the existence of the profession itself.

The statement has been made that we do not have enough medical manpower, enough health facilities or enough research. Medical manpower is basic to a wider extension of research. No doubt the Congress will eventually pass the National Science Foundation bill and thus increase the training of young men in qualified medical schools, but particularly in the basic sciences, which are today in serious need.

In England, following the adoption of the National Health Act which promised everyone in England free medical service and free hospitals, free eyeglasses and free teeth, as well as everything else free in the field of medicine, the service has been marked by utter inability of the doctors, the hospitals, the pharmacists or the dentists to meet the demands placed on them by a great rush of people who wanted perhaps simply to find out how the system works.

My personal observations in England led me to the opinion that the quality of medical service rendered under the National Health Act would never be satisfactory to the average American laborer or farmer. The greatest mistake that England made in adopting its National Health Act was its failure to realize that even moderately good functioning of such an act depends on adequate medical personnel and medical facilities. These England did not have. British politicians felt that any kind of medical care was better than no medical care. That is a hazardous hypothesis.

The American people, including leadership from all of the professions concerned in medicine, have been striving in recent years to develop a plan for distributing medical care suitable to the American free enterprise system. The growth of prepayment plans for hospitalization and for medical care has been phenomenal. At least 30,000,000 persons are now covered by hospitalization insurance under the Blue Cross plans, and commercial carriers have more than doubled their enrolment, giving protection against the costs of hospitalization in 1947 to 14,000,000 voluntary subscribers. In the years from 1944 through 1947 private group health and accident insurance increased from 7,000,000 to more than 14,000,000 persons. Simultaneously, physicians were organizing physician-sponsored prepayment medical and surgical care plans. Today there are some 70 such plans in operation, with a coverage of approximately 7,000,000 persons. Complete medical care programs by the end of 1947 covered more than 1,000,000 persons. No other country has ever developed such a voluntary coverage in such a period of time, and there is reason to believe that this system of coverage is far better suited to the conditions that prevail in the United States than would be any system under government control.

The problem of providing medical care wherever needed is not nearly as simple as many economists and political leaders would lead the people to believe. Again and again political leaders have denied that nationwide compulsory sickness insurance is socialized medicine. Yet the nations that embark on such programs move inevitably into a socialized state in which mines, banks, transportation and practically all public services become nationalized, private responsibility and ownership disappear, individual initiative is destroyed and the result is a socialized state. At the same time that many of our political leaders oppose communism they move toward communism by embracing socialism.

Nowhere else in the world are people as free from the fear of epidemic disease or from the danger of preventable death as in the United States. Obviously we have not yet reached perfection. Anyone familiar with the history of disease would state positively that mankind may never reach perfection in this regard. Disease itself is not static but constantly changing. One need only compare the leading causes of death in 1910 with those of today to know that in the short span of two generations there have been vast changes in our scientific approach to the problems of medical care.

We need no revolution to advance against disease at this tremendous rate of the past forty years, nor do we need a revolution to intensify our progress. The establishment of a compulsory sickness insurance system which would inevitably degrade and deteriorate the medical profession would represent a revolution and would with certainty deteriorate the quality of medical care rendered to our people. Once a nation has embarked on such a program, the ability to retrace the steps becomes less and less with every year that passes. As the years go by, the quality of medical education deteriorates. As the years go by, young men seek opportunity to enter other professions than medicine. Research fails to attract the type of men who in the past have given us the discoveries that have removed the fear of tuberculosis and pneumonia and of epidemic disease.

With what sophistic explanations will those who propose to tear down the great edifice of medical education, medical research and the quality of medical care that we have established in this country and to replace it with a bureaucratic civil servant type of medical care justify their conduct in the years to come?

Medical Motion Pictures

FILM REVIEWS

The following 16 mm., black and white, sound motion pictures were prepared in 1918 under the technical supervision of F. L. Fitzpatrick, Ph.D., *Professor of Natural Sciences, Teachers College, Columbia University*, New York. Produced by and procurable on rental or purchase from: United World Films, Inc., 445 Park Avenue, New York 22.

Paramecium. 390 feet, showing time ten minutes.

The anatomy and physiology of the paramecium including the phenomena of conjugation and of fission are well shown in this motion picture. The internal structure is demonstrated by illumination and magnification. The film is completely objective and well balanced in choice of material.

Amoeba. 275 feet, showing time seven minutes.

This film shows the living amoeba, demonstrating the behavior of the pseudopodia and its ingestion of prey, illustrating how the contents of a food vacuole are digested and absorbed.

The narrator does not always refer to what is being shown at the moment and occasionally contradicts what the audience sees. It must also be mentioned that the word "cyst," used by the narrator to mean a membranous wall, is misleading, since the word is ordinarily defined as a sac with fluid or semisolid contents. In every other respect the film is excellent.

The Life Cycle of Trout. 325 feet, showing time nine minutes.

The development of a fish is depicted beginning with the eggs as they lie on the bottom and with the sperm as it settles like a cloud through the water upon the eggs; however, the source from which the eggs or the sperm originated is not shown. The activity of the individual sperm cells and the peculiar movements on the surface of a developing egg are illustrated. The growth of the embryo is portrayed in an excellent manner and the cardiovascular system is well illustrated.

General Comment.—The terminology used by the narrator in these films can only be appreciated by adequately prepared high school or college classes; otherwise, for complete understanding, the films should be preceded either by reading or by other special preparation. These productions should be valuable material for courses in nursing education in which references to amoeba and paramecium are frequently made in courses in physiology in the absence of facilities for showing the living object. They would also supplement a program for sex education.

All three films are distinguished by a commendable pedagogical device; namely, a succinct recapitulation of the subject matter in the closing sentences of the narration. The photography and photomicrography are excellent throughout these films.

Removal of Intervertebral Discs by the Abdominal Extraperitoneal Route. 16 mm., color, sound, 400 feet, showing time twelve minutes. Prepared in 1948 by Paul H. Harmon, M.D., Oakland, Calif. Procurable on loan from the author, The Permanente Hospitals, Department of Orthopedic Surgery, Broadway and MacArthur Blvd., Oakland 11.

The operation portrayed in this motion picture is unique; however, its use is not justifiable because the more or less standard types of surgical procedures for the removal of intraspinal lesions employed by innumerable surgeons have given satisfactory results. The operative procedure illustrated does not enable the surgeon to visualize the porton of the intervertebral disk which is protruded and produces the patient's symptoms and signs. It probably would be easy to overlook loose intraspinal fragments of the disk. It would be impossible to remove an intraspinal neoplasm which had masqueraded as a protruded intervertebral disk, and if hemorrhage occurred in the spinal canal, it likely would not be recognized until gross neurologic signs developed. Then, a rather extensive laminectomy for removal of blood clot would be required. The abdominal incision cutting across muscle fibers and the nerves which supply the abdominal muscles would result in a weakness of the abdominal wall, if not actual hernia. Furthermore, there seems to be unjustifiable danger to the great vessels coursing anterior to the spinal column and to the sympathetic trunk. Although this type of procedure could be used for some protrusions of thoracic disks, such a surgical attack on thoracic disks is likely to carry a much higher morbidity and mortality rate than the usual laminectomy operation. The operation, of course, is not applicable to protrusions of cervical disks, and the posterior approach through the spinal canal which is applicable to disk lesions in the lumbar, thoracic and cervical regions should be, for the time being at least, the approach of choice.

Photography is very good.

Listening Eyes. 16 mm., color, sound, 700 feet (1 reel), showing time seventeen minutes. Prepared in 1948 for The John Tracy Clinic, Los Angeles, by the University of Southern California, Department of Cinema, under the sponsorship of Walt Disney Productions. Procurable on loan from: The John Tracy Clinic, 924 West Thirty-Seventh Street, Los Angeles 7.

This is an excellent demonstration of methods used to develop the deaf child mentally, physically, emotionally and socially, and also depicts the activities of sense training, speech reading and speech preparation. It shows the mother attending psychology and speech classes once a week observing and eventually taking a part in the teaching program for her child.

This motion picture is recommended for showing to pediatricians, otologists, general practitioners and medical students. It should also be suitable for parent-teachers' groups, boards of education, teachers of exceptional children, prospective teachers at universities and service organizations, to inform them that there is an institution which helps parents understand the problems of deafness and that handicapped children can be helped.

This is a well planned motion picture. The photography is excellent.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Food and Drug Acts: Use of Qualified Medical Witnesses to Establish Misbranding.—This was a consolidation for purposes of trial of four libel actions by the United States for the condemnation of quantities of a proprietary drug called "nue-ovo." The defendant intervened as claimant of the seized property and, from judgments of condemnation, appealed to the circuit court of appeals, ninth circuit.

The defendant, an Oregon corporation, has engaged in the manufacture, sale and distribution of, among others, a proprietary drug product known as "nue-ovo." The product is manufactured at Portland, Ore., and shipped to purchasers and distributors in most of the states west of the Mississippi River. The defendant's direct sales program involves extensive use of advertisements in daily and weekly newspapers and similar publications. The advertisements referred to are not, of course, part of the labeling. The libel alleges, however, that certain statements contained in circulars shipped with the product are false and misleading in that they represent and suggest and create in the mind of the reader thereof the impression that "nue-ovo" is effective in the treatment of arthritis, rheumatism, neuritis, sciatica and lumbago, whereas the article is not effective in the treatment of such conditions. One of the defendant's major contentions on appeal was that the trial court had erred in submitting the issues to the jury since every statement in the labeling as to the effectiveness of the product is a statement of opinion and at the conclusion of the case the record showed nothing more than a difference of opinion among qualified medical experts as to the effectiveness of the product.

Great reliance was placed, by the defendant, on a Supreme Court decision which was made about four years prior to the enactment of the original Food and Drugs Act in 1906. In that early case (*American School of Magnetic Healing v. McAnnulty*, 187 U. S. 94), the Supreme Court said that as the effectiveness of almost any particular method of treatment of disease is, to a more or less extent, a fruitful source of difference of opinion, even though the great majority may be of one way of thinking, the efficacy of any special method is certainly not a matter for the decision of the Postmaster General within these statutes relative to fraud. Unless the question may be reduced to one of fact, as distinguished from mere opinion, the decision continued, we think these statutes cannot be invoked for the purpose of stopping the delivery of mail matter. To illustrate some of the changes which have taken place in the law since the enactment of the Food and Drugs Act, however, the court of appeals said that in contrast to the meager technical facilities for the determination of medical questions possessed by the Postmaster General—at least at the time that the McAnnulty case was decided—the Federal Security Agency has at its disposal almost unlimited professional resources with which to carry out its investigations in the enforcement of the Federal Food, Drug and Cosmetic Act of 1938. This extensive professional implementation now authorized by the Food and Drug Act, said the court of appeals, was fully utilized in the case at bar.

Much of the government's evidence in the instant case consisted of "controlled clinical studies" conducted by eminently qualified physicians and surgeons. Dr. Frances Baker, Director of the Department of Physical Medicine at the University of California, whose professional qualifications appear to be highly impressive, testified at great length regarding a clinical study that she made in 1944 with the "nue-ovo" that contained cascara and licorice, but not vitamin B_1 and salicylate. The study was made on patients in the orthopedic clinic at the University of California Hospital. At the end of two months, 5 of the patients "were no better at all" and "one felt better." As the results of her studies, Dr. Baker testified that she thought that "nue-ovo" "offers us nothing that is of value in the treatment of arthritis." She expressed similar opinions as to "nue-ovo's" effectiveness in cases of lumbago, sciatica, neuritis and rheumatism and stated that the addition of sodium salicylate and vitamin B_1 in quantities found in one type of "nue-ovo" would not "give us any value whatever." Dr. John H. Wheeler, a practicing physician in Kansas City, Mo., and on the teaching staff of the University of Kansas, in 1944, at the request of the Food and Drug Administration in Kansas City, made a study of "nue-ovo" in the outpatient department of the University of Kansas. The type of "nue-ovo" that he used was also that containing cascara and licorice, without the vitamin B_1 and salicylates. Six patients were asked to continue the medicine for six weeks. Dr. Wheeler testified that the medicine had "no effect whatsoever" on 3 patients, and 2 patients stated that they "were of the opinion . . . that they were no worse." On the day of his return, the sixth patient "felt that he had definitely improved while taking his "nue-ovo," but "was complaining of some new pains involving both knees." This sixth patient, however, made that report ten months after starting the medication with "nue-ovo" and still had some of the six weeks' supply of the medicine left. On the basis of this experience and the experience of prior experiments in 1940, Dr. Wheeler was of the opinion that, with or without cascara, licorice or sodium salicylate or thiamine in the amount stipulated, "nue-ovo's" "effectiveness is nil" in the treatment of arthritis, rheumatism, lumbago, neuritis and sciatica. Dr. James M. Dille, professor of pharmacology and assistant dean of the School of Medicine of the University of Washington, while on the witness stand went down the list of ingredients of "nue-ovo" and categorically reported that scientific "investigation" by "doctors or pharmacologists" has shown that many of the ingredients have no "action" as drugs.

The testimony of experts that is based on tests or experiments made by them does not come within the ambit of the McAnnulty rule, said the court of appeals. It is generally agreed that testimony as to the consensus of medical opinion may be considered in drug-misbranding cases. In this circuit and elsewhere it has been held that expert testimony even in its broadest sense—i. e., where the witness has neither tested the product nor purports to report the consensus of medical opinion—is admissible on the question of therapeutic value. Altogether, the court concluded, there was ample evidence to support the verdict of the jury.

This, and other contentions of the defendant were accordingly overruled, and the judgment of condemnation was affirmed [Certiorari was denied by the Supreme Court of the United States.]—*Research Laboratories, Inc. v. United States, 167 F. (2d) 410 (1948).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I & II.* Various Centers, Feb., June and Sept. 1949. *Part II.* April, 1949. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2, Pa.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc.: *Written.* July 15. Various locations. Final date for filing application is April 15. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Avenue, New York 27.

American Board of Internal Medicine: *Oral.* San Francisco, Feb. 8-10, 1949. New York City, March 23-25. Final date for filing application is Jan. 2. Philadelphia, June 1-3. Final date for filing application is Jan. 2. *Written.* Oct. 17, 1949. Final date for filing application is May 1. Asst. Sec.-Treas., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 1949. Final date for filing application is Jan. 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn.

American Board of Ophthalmology: *Written.* Jan. 14. *Oral.* San Francisco, March 21-24; New York, June 11-15; St. Louis, Oct. 15-19; Boston, Dec. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Obstetrics and Gynecology, Inc.: *Oral.* Chicago, May 8-14. Final date for filing application is April 1. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsburgh 6.

American Board of Orthopedic Surgery: *Part I.* Various Centers, April and May. Final date for filing application is Dec. 31. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Otolaryngology: New York, May 11-14; Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Boston, April. Final date for filing application is March 1. Sec., Dr. Robert A. Moore, 507 S. Euclid Ave., St. Louis 10, Mo.

American Board of Pediatrics: *Oral.* St. Louis, Feb. 18-20. Baltimore, May 7-9. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Rd., Rosemont, Pa.

American Board of Physical Medicine: Atlantic City, June 4-5. Final date for filing application is March 15. Sec., Dr. R. L. Bennett, 30 N. Michigan Blvd., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Psychiatry and Neurology: *Oral.* May. Final date for filing application is Feb. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, March 1949. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 28-30, 1949. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

Alaska:* Juneau, March 1. Sec.-Treas., Dr. W. M. Whitehead, Box 140, Juneau.

Arkansas:* Little Rock, June 9-10. Sec., Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 2-3. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

Colorado:* Denver, Jan. 4-7. Final date for filing application is Dec. 18. Sec.-Treas., Dr. W. W. King, 831 Republic Bldg., Denver 2.

Connecticut:* Hartford, March 8-9. Secretary to the Board, Dr. Creighton Barker, 258 Church Street, New Haven.

Delaware: *Examination.* Dover, Jan. 11-13. *Endorsement.* Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

Georgia: *Examination.* June, Atlanta and Augusta. *Reciprocity.* Atlanta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O. San Francisco, Calif.

Hawaii: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 10-12. Dir., Bureau of Occupational Licenses, Miss Estella S. Mulliner, State House, Boise.

Illinois: Chicago, Jan. 11-13. Superintendent of Registration, Mr. Fred W. Ruegg, State House, Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

Maine: Portland, March 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Massachusetts: *Examination.* Boston, March 8-11. Sec., Dr. George L. Schadt, 413 E. State House, Boston.

Minnesota:* *Minneapolis, Jan. 18-20. Sec., Dr. J. F. DuBois, 230* Lowry Medical Arts Building, St. Paul.

Montana: Helena, April 4-6. Sec., Dr. O. G. Klein, First National Bank Building, Helena.

Nebraska:* *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Building, Lincoln 9.

Nevada: Carson City, May 2. Sec., Dr. G. H. Ross, 112 N. Curry Street, Carson City.

New Hampshire: Concord, March 10. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, June 21-24. Sec., Dr. E. H. Hallinger, 28 West State Street, Trenton 8.

New Mexico: Santa Fe, April 11-12. Sec., Dr. V. E. Berchtold, 141 Palace Ave., Santa Fe.

New York: *Examination.* Various Centers, Feb. 1-4. Sec., Dr. J. L. Lochner, Jr., 23 S. Pearl St., Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 17. Sec., Dr. Ivan M. Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-7. Act. Sec., Dr. C. J. Glaspel, Grafton.

Oregon:* *Examination.* Jan. 5-7. *Endorsement.* Jan. 21-22. Final date for filing application is Jan. 3. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, Jan., 1949. Act. Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Puerto Rico: *Examination.* Santurce, March 1. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

Rhode Island:* *Examination.* Providence, Jan. 6-7. Chief, Mr. *Thomas B. Casey, 366 State Office Building,* Providence.

South Dakota:* Pierre, Jan. 18-19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

Texas: *Examination.* Austin, June 16-18. Sec., Dr. M. H. Crabb, 209 Medical Arts Bldg., Fort Worth 2.

Utah: *Examination.* Salt Lake City, July. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

Vermont: *Examination.* Burlington, Feb. 3-5. Sec., Dr. F. J. Lawliss, Richford.

Washington:* Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia *Wotherspoon, Olympia.*

West Virginia: Charleston, Jan. 3-5. Sec., Public Health Council, Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

Wisconsin:* Madison, Jan. 11-13, 1949. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls, Wis.

Wyoming: *Examination.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Feb. 21-26. Sec.-Treas., Dr. C. Earl Albrecht, Box 1931, Juneau.

Connecticut: New Haven, Feb. 12. Exec. Asst., State Board of Healing Arts, Miss Mary G. Reynolds, 110 Whitney Ave., New Haven 10.

District of Columbia: *Examination.* Washington, April 18-19. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg., East, Washington.

Florida: *Examination.* Gainesville, June 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Iowa: *Examination.* Des Moines, Jan. 11. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Ann Arbor & Detroit, Jan. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Minnesota: *Examination.* Jan. 4-5, April, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

Oklahoma: Spring of 1949. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Rhode Island: *Examination.* Providence, Feb. 9. Chief, Mr. Thomas B. Casey, 366 State Office Building, Providence.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, Jan. Sec., Dept. of Licenses, Miss Virginia Wotherspoon, Olympia.

Wisconsin: Madison, April 2.. Milwaukee, June 4. Sec., Prof. W. H. Barber, Ripon College, Ripon.

POSTGRADUATE CONTINUATION COURSES FOR PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for the Period January 1, 1949 to July 15, 1949

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Postgraduate Courses for Practicing Physicians—Jan. 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ALLERGY		
American Academy of Allergy and University of Georgia Medical School, Augusta	Orientation Course in Allergy	5 days, March 7-11, 1949	$ 50.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Allergy, One Month Personal Course in Allergy	1 month, full time, first of every month	200.00
	Part Time Personal Course in Allergy and Related Conditions	10 weeks, April 20, part time, one day each week	125.00
	Six Month Personal Course in Allergy	6 months, full time, by appointment	500.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor At: University Hospital, Ann Arbor	Allergy	5 days, April 18-22, 1949	30.00
Wayne University College of Medicine, 1516 St. Antoine St., Detroit, Mich. At: City of Detroit Receiving Hospital	Allergy Clinic and Conference	3 months, part time, March 21-June 18, 1949	25.00
Joint Committee on Post-Graduate Education, Long Island College of Medicine, Medical Society of the County of Kings, 1313 Bedford Ave., Brooklyn At: Beth El Hospital	Allergy (1)	8 weeks, part time, begins April 1949	30.00
At: Kings County Hospital	Allergy (11)		20.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Medicine PM 36, Allergy	2 months, part time, once a week, Jan. 25-March 28, 1949	40.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Allergy	2 months, part time, Tuesday mornings, arranged	50.00
New York University-Bellevue Medical Center, 477 First Ave., New York	A-302, Allergy	Jan. 7-Feb. 5, part time, Friday afternoons	25.00
	B-331, Allergy	3 weeks, full time, March 7-25, 1949	200.00
The American College of Physicians, 4200 Pine St., Philadelphia 4 At: Haddon Hall Hotel, Atlantic City, N. J.	Diseases Caused by Immune Mechanisms	1 week, full time, April 28-May 1, 1949	30.00 60.00
The Thomas Clinic, Richmond, Va.	Course of Training in Clinical Allergy	12 months, full time, January 1 and July 1 each year	None
	ANATOMY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Part Time Personal Course in Anatomy of the Extremities on the Cadaver	1 day each week for ten weeks, March 16	125.00
	Part Time Course in Surgical Anatomy on the Cadaver	1 day each for ten weeks, March 17	125.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12	Dissection (essentially a review dissection without didactic instruction)	3 months, at physician's own choosing of time when material is available	Arranged
University of Maryland School of Medicine, Baltimore	General Anatomy "A"	Arranged	Arranged
	Surgical Anatomy "B"	15 weeks, 2 days 1 week, 3 hours 1 day, Jan 26-June 4, 1949	150.00
Harvard Medical School, 25 Shattuck St., Boston	Surgical Anatomy	54 days, May 2-June 24, 1949	200.00
Tufts College Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Ziskind Research Laboratories	Surgical Anatomy [18]	8 weeks, part time, March 7-April 30, 1949	200.00 [3] 5.00 [4]
University of Michigan Medical School Department of Postgraduate Medicine, Ann Arbor At: East Medical Building, Ann Arbor	Anatomy	16 days, Feb. 10-May 26, 1949	40.00
Wayne University College of Medicine 1512 Antoine St., Detroit 26	Surgical Anatomy	24 weeks, March 21-June 18, 1949	35.00 [5]
	Advanced Dissection (Trunk, Head and Neck, Back and Extremities) (Female Pelvis)	1 afternoon, March 21-June 18, 1949	50.00

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANATOMY—Continued		
Cornell University Medical College, 1300 York Ave., New York 12	Course in Surgical Anatomy	4 weeks, May 31, 1949-June 25, 1949	200.00
New York Medical College, Flower and Fifth Avenue Hospital, 20 East 106th St., New York.	Applied Anatomy for the General Surgeon	Approximately 250 hours, arranged	375.00
	Anatomy of the Abdomen	100 hours, to be arranged	150.00
	Anatomy of the Thorax	100 hours, to be arranged	150.00
New York Polyclinic Medical School, 341-353 W. 50th St., New York 19	Head and neck dissection	6 weeks, part time, arranged	150.00
New York Post-Graduate Medical School, 303 E. 20th St., New York 3	A-241, Surgical Anatomy as Applied to Operative Gynecology (Cadaver)[18]	12 sessions, Tues., Thurs. and Sat., 11 a.m.-12:30 p.m.; Feb. 1-March 1, 1949 and April 5-May 7, 1949	200.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	C-1603, Anatomy of the Abdomen	Part time	
		12 weeks, 5 days a week, 4 hours daily	150.00
		16 weeks, 5 days a week, 4 hours daily	200.00
		8 weeks, 5 days a week, 6 hours daily January-June 1949	225.00
	C-1604 (A), Anatomy of the Female Pelvis	Part time, 12 weeks, 5 days a week, 4 hours daily, January-June 1949	150.00
	C-1601, Anatomy of the Head and Neck	Part time	
		12 weeks, 5 days a week, 4 hours daily	150.00
		16 weeks, 5 days a week, 4 hours daily	200.00
		8 weeks, 5 days a week, 6 hours daily January through June	225.00
	C-1604 (B), Anatomy of the Male Pelvis	Part time, 12 weeks, 5 days a week, 4 hours daily, January-June 1949	150.00
	C-1605, Anatomy of the Musculoskeletal System	Part time	
		12 weeks, 5 days a week, 4 hours daily	150.00
		16 weeks, 5 days a week, 4 hours daily January-June 1949	200.00
	C-1602, Anatomy of the Thorax and its Viscera	Part time, 12 weeks, 5 days a week, 4 hours daily, January-June 1949	150.00
	C-1606, General Anatomy	Part time, 8 weeks, 5 days a week, 3 hours daily (mornings), January-June 1949	150.00
School of Medicine, Western Reserve University, 2101 Adelbert Rd., Cleveland 6	Postgraduate Applied Anatomy	5 afternoons weekly for 2 to 6 months, January-April 30, 1949, may start at beginning of each month	70.00[6]
	ANETHESIOLOGY		
The Colorado State Medical Society, Colorado State and Denver Society of Anesthesiologists At: The University of Colorado Medical Center, 4200 E. 9th Ave., Denver 7	General Practitioners on the Techniques and Practice of Anesthesiology	4 days, full time, Jan. 12-15, 1949	20.00[3] 5.00[4]
The George Washington University School of Medicine and Hospital, 1335 H St. N.W., Washington 5, D. C.	Anesthesiology	1 week, full time, Feb. 28-March 4, 1949	50.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	One Month Practical Course in Inhalation Anesthesia, including Ether and Nitrous Oxide	1 month, full time, available first of every month	125.00
	One Month Practical Course in Inhalation Anesthesia, including Ether, Nitrous Oxide, Ethylene and Cyclopropane	1 month, full time, available first of every month	200.00
	Two Weeks Practical Course in Spinal Anesthesia and Intravenous Anesthesia	2 weeks, full time, available every two weeks	150.00
	Two Weeks Practical Course in Endotracheal Anesthesia	2 weeks, full time, available every two weeks	150.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 East 106th St., New York	Applied Anatomy for the Anesthetist	125 hours, to be arranged	275.00
	Clinical Anesthesiology	3 months, full time, to be arranged	200.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Anesthesia	3 months, full time, Jan. 3, 1949; April 4, 1949	350.00
	Applied Anesthesia	3 months, full time, April 1, 1949	300.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 1st Ave., New York 16	B-942, Anesthesia	Full time, two weeks January-June	125.00[7] 65.00[9]
	B-943, Regional Anesthesia	2 weeks, full time, Monday through Friday, 9-5 p.m., Jan. 3-Jan.14, 1949; May 2-May 13, 1949	200.00
	B-944, Anesthesiology	2 weeks, full time, Monday through Friday, 9-5 p.m., April 11-April 23, 1949	150.00
Graduate School of Medicine, University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital and Private Offices	Segmental Neuralgias; Relief by Regional Anesthesia[35]	3 weeks (48 hours), February 1949-May 1949; *monthly*	200.00
	ARTHRITIS		
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: *Jewish Hospital*	Arthritis	8 weeks, part time, beginning April 1949	30.00
New York University-Bellevue Medical Center Postgraduate Medical School, 477 First Ave., New York 16	B-330, Arthritis and Allied Rheumatic Disorders	5 days, full time, March 7-11, 1949	55.00
	A-301, Arthritis and Allied Rheumatic Disorders	Part time, Tuesday 9-12 p.m., Jan. 4-Feb. 15, 1949	45.00
	A-370, Arthritis and Rheumatic Disorders	6 weeks, part time, Mon., Wed., Thurs., 9-12 p.m., Jan. 3-Feb. 10, 1949	100.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital	Rheumatic Diseases	5 days, full time, March 21-25, 1949	40.00[3] 5.00[4]
	BACTERIOLOGY		
Wayne University College of Medicine, 1512 Antoine St., Detroit 26	Antibiotic Substances	1 hour/week, March 21-June 18, 1949	15.00
	Immunology and Virology	1 afternoon/week, March 21-June 18, 1949	35.00
	Parasitology	1 afternoon/week, March 21-June 18, 1949	35.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 East 106th St., New York	Bacteriology	3 months, half time, to be arranged	100.00
	Parasitology	6 weeks, half time, to be arranged	75.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 1st Ave., New York 16	C-109, Bacteriology	16 weeks, part time, Monday 2-4 p.m., Feb. 28-June 13, 1949	75.00
	A-110, Clinical Bacteriology and Serology	Part time, Monday through Saturday 9 a.m.-12 p.m., Feb. 1-28, 1949	100.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Practical Laboratory Instruction in Bacteriology	Arranged	Arranged
	BASIC SCIENCES		
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor At: University Hospital, Ann Arbor	Application of the Basic Sciences to Clinical Medicine	1 month, Jan. 3-29, 1949	100.00

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
BASIC SCIENCES—Continued			
Center for Continuation Study, University of Minnesota, Minneapolis 14	The Basic Sciences and Their Clinical Correlation	11 weeks, Jan. 4-March 19, 1949	150.00 [3] 11.15 [4]
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Basic Sciences, Pathology related to Various Specialties	3 months to 1 year, full-time, arranged	200.00 to 600.00 [35]
	Basic Sciences, Pathology related to Various Specialties	4-5 weeks, full time, arranged	200.00
University of South Dakota School of Medicine, Vermillion, S. D.	Clinical Considerations of Biochemistry, Applied Pathology, Clinical Applications of Physiology, Applied Anatomy, Clinical Applications to Pharmacology, Applied Bacteriology	3-6 months, any time	None
Southwestern Medical College of the Southwestern Medical Foundation, 2211 Oak Lawn Ave., Dallas 4, Texas	Individual Review in Basic Sciences	Part or full time, arranged	25.00 [10]
University of Wisconsin Medical School, 418 N. Randall St., Madison	The Basic Sciences	Semester basis, Feb. 7-18, 1949	160.00 [43]
BIOCHEMISTRY			
Baylor University College of Medicine, 500 Lincoln Ave., Houston, Texas	Seminar in Clinical Biochemistry	10 2-hour seminars, every third or fourth week, January-May 1949	Arranged
CARDIOVASCULAR DISEASE			
University Extension (Medical Extension), University of California, 405 Hilgard Ave., Los Angeles 24	Cardiology	5 days, full time, Jan. 31-Feb. 4, 19 9	To be announced
Yale University School of Medicine and Connecticut State Medical Society, 333 Cedar St., New Haven 11, and 258 Church St., New Haven 10 At: Yale University School of Medicine, 333 Cedar St., New Haven 11	Medicine 200, Cardiovascular Disease	12 sessions, March 10-May 26, 1949	45.00
George Washington University School of Medicine, 1335 H St., N.W., Washington, D. C.	Cardiovascular Diseases	2 weeks, full time, April 25-May 6, 1949	100.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Part time Personal Course in Cardiovascular Diseases	1 day each week for 10 weeks, April 13	80.00
	Part time Personal Course in Heart Disease and Electrocardiography	1 day each week for 10 weeks, February 23	125.00
	Four week Course in Electrocardiography and Heart Disease	4 weeks, to be announced	175.00
	Two week Personal Course in Electrocardiography and Heart Diseases	2 weeks, July 18	150.00
	Part time Course in Surgical Aspects of Peripheral Vascular Disease	1 day each week for 5 weeks, March 23	60.00
Harvard Medical School, 25 Shattuck St., Boston 25 At: Boston City Hospital, Boston	Cardiology (1)	3½ months, daily all day except Saturday afternoons, Jan. 31-May 14, 1949	500.00
At: Massachusetts General Hospital	Cardiovascular Disease	12 months, daily, April 1, 1949-March 1950	800 00
At: Peter Bent Brigham Hospital	Clinical Heart Disease	1 month, full time, probably in July 1949	150.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital	Cardiology	5 days, full time, April 4-8, 1949	40.00 [3] 5.00 [4]
Michigan State Medical Society, 2020 Olds Tower, Lansing 8, Mich. At: Book Cadillac Hotel, Detroit	Heart and Rheumatic Fever	1 day, March 26, 1949	None
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich. At: University Hospital, Ann Arbor	Diseases of the Heart	5 days, April 4-8, 1949	30.00
Minnesota Heart Association At: University of Minnesota Center for Continuation Study, Minneapolis 14	Cardiovascular Diseases	2 days, Feb. 14 and 15, 1949	To be announced
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Beth El Hospital	Peripheral Vascular Diseases (I)	10 weeks, part time, beginning April 1949	20.00
	Peripheral Vascular Diseases (III)	8 weeks, part time, beginning April 1949	20.00
At: Coney Island Hospital	Peripheral Vascular Diseases (II)	5 weeks, part time, beginning April 1949	20.00
At: Jewish Hospital	Hypertension and Nephritis	8 weeks, part time, beginning April 1949	20.00
Columbia University, 630 W. 168th St., New York 32 At: Montefiore Hospital	Medicine, PM 61-B, Advanced Cardiology	4 months, once a week, three hours, Feb. 1, 1949-June 6, 1949	250.00
At: Mount Sinai Hospital	Medicine, PM 48, Bedside Diagnosis and Treatment of Heart Disease with Special Emphasis on Measurements of the Circulatory	2 months, once a week, 2 hours, Jan. 10, 1949-March 14, 1949	45.00
	Cardiovascular Diseases (Medicine PM-31)	2 months, part time, Jan. 25-March 24, 1949	125.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Cardiology	20 successive Wednesdays, 9-11:30, May begin any Wednesday except during July and August	150.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Diagnosis and Treatment of Diseases of the Heart	3 weeks, arranged, part time, arranged	75.00
New York University-Bellevue Medical Center, Post-Graduate Medical School, 477 1st Ave., New York 16 At: Beth Israel Hospital	A-37, Cardiovascular Diseases	12 weeks, part time, Jan. 6-March 24, 1949; March 31-June 16, 1949	50.00
New York University-Bellevue Medical Center, Post-Graduate Medical School, 477 1st Ave., New York 16	A-319, Peripheral Vascular Diseases	Part time, Tuesday, 2 p.m.-4 p.m. Jan. 4-Feb. 15, 1949	30.00
	B-340, Peripheral Vascular Diseases	Full time, five days duration, March 21-25, 1949	55.00
	B-349, Cardiology	Full time, 4 weeks duration, May 3-27, 1949	175.00
	A-303, Cardiology	Part time, Monday, 2 p.m.-5 p.m., Jan. 3-Feb. 21, 1949	45.00
St. Francis Sanatorium for Cardiac Children, Roslyn, N. Y.	Comprehensive Postgraduate Course in Rheumatic Fever and Rheumatic Heart Disease	2 weeks, full time, June 1-14, 1949	75.00
The American College of Physicians, 4200 Pine St., Philadelphia 4 At: Philadelphia General Hospital, Philadelphia	Cardiology	1 week, full time, to be announced, tentative date May 2-7, 1949	30.00 [1] 60.00 [2]
Graduate School of Medicine, University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Cardiology	8 consecutive Thursdays (48 hours total) to start 1st Thursday of January and April 1949	80.00

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	CHEST DISEASES		
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	Bronchiectasis	3 periods, 6 hours, beginning March 6, 1949; Mondays, 7:30-9:30 p.m.	15.00
George Washington University School of Medicine, 1335 H St., N.W., Washington, D. C.	Thoracic Diseases	1 week, full time, April 18-22, 1949	50.00
University of Florida, Department of Medicine, Graduate School, 2033 Riverside Ave., Jacksonville, Fla. At: Orlando, Florida	Tuberculosis Seminar	3 days, Jan. 5-7, 1949	Undetermined
American College of Chest Physicians, Pennsylvania Chapter and the Laennec Society, 500 N. Dearborn St., Chicago 10 At: Philadelphia	Postgraduate Course in Diseases of the Chest	1 week, full time, Feb. 28, 1949-March 5, 1949	Undetermined
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Part time Personal Course in Technic of Physical Examination and Diagnosis of the Chest	1 day each week for 8 weeks, April 13	60.00
Indiana University School of Medicine and the American Trudeau Society, 1040 W. Michigan St., Indianapolis 7 At: Indiana University Medical Center, Indianapolis, Ind.	Postgraduate Course in Thoracic Disease	5 days, full time, March 14-18, 1949, inclusive	50.00
American Trudeau Society; St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis 4; Missouri State Medical Association, 634 N. Grand Blvd., St. Louis 3	Postgraduate Course in Pulmonary Disease for General Practitioners	3 days, Jan. 17-19, 1949	25.00
American Trudeau Society, 1790 Broadway, New York 19; Emory University School of Medicine, 101 Physiology Bldg., Emory University, Ga. At: Atlanta, Ga.	Postgraduate Course in Pulmonary Diseases	5½ days, April 4-9, 1949	50.00
American Trudeau Society, Medical Section, National Tuberculosis Association, 1790 Broadway, New York 19; Tulane University of Louisiana School of Medicine and Louisiana State University, 1430 Tulane Ave., New Orleans 12 At: New Orleans, La.	Postgraduate Course in Pulmonary Diseases	2 weeks, March 13-26, 1949	100.00
American Trudeau Society, Medical Section, National Tuberculosis Association, 1790 Broadway, New York 19; Indiana University Medical School, 1040 W. Michigan St., Indianapolis 7 At: Indianapolis, Ind.	Postgraduate Course in Pulmonary Diseases	5½ days, March 7-12, 1949	50.00
Columbia University, 630 W. 168th St., New York 32 At: Columbia-Presbyterian Medical Center	Medicine PM-1, Physiologic Therapy in Broncho-Pulmonary Diseases	5 days, full time, Jan. 24-29, 1949	40.00
At: *Montefiore Hospital*	Medicine PM-63, Diseases of the Chest	4½ months, once a week, 2½ hours, Jan. 7, 1949-May 20, 1949	100.00
At: Mount Sinai Hospital	Diseases of the Chest (Medicine PM-37)	2 months, once a week, 3 hours, Jan. 29-March 28, 1949	60.00
American Trudeau Society, Medical Section, National Tuberculosis Association, 1790 Broadway, New York 19; College of Medical Evangelists and University of Southern California School of Medicine, Boyle and Michigan Aves., Los Angeles 33, and 3551 University Ave., Los Angeles 7 At: Los Angeles, Calif.	Postgraduate Course in Pulmonary Diseases	5 days, Jan. 25-29, 1949	50.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 East 106th St., New York City At: New York City Municipal Sanatorium, Otisville, N. Y.	Pulmonary Tuberculosis	3 weeks, full time	175.00 [26]
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 1st Ave., New York 16	A-308, Acute and Chronic Diseases of Chest	Part time, Thursdays, 9 a.m.-12 p.m., Jan. 6-Feb. 24, 1949	45.00
	B-333, Acute and Chronic Pulmonary Diseases	Full time, 5 day duration, May 2-6, 1949	55.00
Temple University School of Medicine, Philadelphia 40	Bronchology and Esophagology	2 weeks, Feb. 7-18, 1949	250.00
	DERMATOLOGY AND SYPHILOLOGY		
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	Dermatology	12 periods, 18 hours, begins Jan. 4, 1949, Tuesdays 8-9:30 p.m.	40.00
University Extension in cooperation with University of California Medical School, San Francisco and Los Angeles, Calif. At: Quonset Hut Conference Room, General Medical and Surgical Hospital, V. A. Center, Wilshire and Sawtelle Blvds., Los Angeles 25	Dermatology in Internal Medicine	8 meetings of 2 hours, January 3rd weekly through February 21	35.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Clinical Course in Dermatology	2 weeks or one month, begins every Monday except when no. 2 in session	75.00 [9] 125.00 [10]
	Two week Course in Dermatology	2 weeks, April 18, June 13	100.00
	Twelve month Clinical Course in Dermatology	12 months, by appointment	1,000.00
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston 15 At; Massachusetts General Hospital	Dermatology	1 month, half, February, March, April, May 1949	75.00
	Dermatology 2	Monthly, daily, all day, except Saturday afternoons, monthly, February to May 1949	125.00
	Dermatology and Syphilology	12 months, full time, April 1, 1949-March 1950	750.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Dermatology II	5 days, full time, April 11-15, 1949	40.00 [2] 5.00 [4]
Wayne University College of Medicine, 1512 Antoine St., Detroit 26 At: *Receiving Hospital*	Dermatology Seminar	2 hours/week, March 21- June 18, 1949	15.00
At: Social Hygiene Clinic	Conference on Venereal Diseases	1½ hours/week, March 21-June 18, 1949	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Dermatology	2 days, May 16 and 17, 1949	To be announced
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Venereal and Skin Diseases (Medicine PM-40)	6 weeks, part time, Jan. 26-March 11, 1949	30.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Dermatology and Syphilology	6 weeks, part time, and 3 months, part time, Jan. 3, April 4, 1949	100.00 300.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B-1210, Seminar in Dermatological Histopathology [18]	5 days duration, full time, May 9-13, 1949	75.00
	B-1230, Symposium on Dermatology and Syphilology [18]	5 days duration, full time, May 23-27, 1949	100.00
	DIABETES		
University of California, Medical Extension, San Francisco 22	Endocrinology, including Diabetes	5 days, full time, June 20-24, 1949	Not given
Cook County Graduate School *of Medicine*, 427 S. *Honore* St., Chicago 12	*Part time* Course in Medical and Surgical Diabetes	1 day each week for 10 weeks, March 16	80.00
Harvard Medical School, 25 Shattuck St., Boston 15 At: New England Deaconess Hospital	Diabetes in Relation to General Medicine	5 days, full time, Monday, July 11-15, 1949	Not given

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References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	DIABETES—Continued		
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital	Diabetes	6 days, full time, March 23-April 2, 1949	40.00[3] 5.00[4]
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Maimonides Hospital	Diabetes Mellitus	12 weeks, part time, beginning April 1949	30.00
New York University College of Medicine, 477 First Ave., New York 16 At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3	B-337, Diabetes Mellitus, Nephritis and Hypertension	5 days, full time, March 14-18, 1949	55.00
New York University-Bellevue Medical Center Post Graduate Medical School, 477 First Ave., New York 16 At: Lenox Hill Hospital	A-384, Diabetes Mellitus	6 weeks, part time, Monday and Thursday, 3-4:30 p.m., Jan. 10-Feb. 17, 1949; April 4-May 12, 1949	50.00
The Frank E. Bunts Educational Institute, 2020 E. Ninety-Third St., Cleveland At: The Cleveland Clinic Foundation	Diabetes	2½ days, Thursday, Friday and Saturday, March 17-19, 1949	15.00
University of Oregon Medical School, Marquam Hill, Portland 1, Oregon	Diabetes	3 days, Jan. 31-Feb. 2, 1949	30.00
	ELECTROCARDIOGRAPHY		
University Extension in cooperation with University of California Medical Schools, San Francisco and Los Angeles At: University of California at Los Angeles Campus	Electrocardiography	6 meetings of 2 hours, January 4-20, Tuesdays and Thursdays	15.00
University of California Medical School, University Extension, San Francisco 22	Interpretation of Electrocardiograms	5 days, part time, Jan. 31-Feb. 3, 1949, to be announced	To be announced
Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16	Electrocardiographic Interpretation	13 weeks, 2 hours per week, Feb. 8-May 3, 1949	50.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital, Boston	Electrocardiography I	5 days, full time, Feb. 28-March 4, 1949	40.00[3] 5.00[4]
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16	Basic Electrocardiography	5 weeks, part time, beginning April 1949	20.00
At: Beth El Hospital At: Jewish Hospital	Clinical Electrocardiography	5 weeks, part time, beginning April 1949	20.00
	Electrocardiography and Clinical Cardiology	5 weeks, part time, beginning April 1949	30.00
At: Maimonides Hospital	Clinical Cardiology and Advanced Electrocardiography	4 weeks, part time, beginning April 1949	20.00
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Intensive Course in Elementary Electrocardiography (Medicine PM-41)	5 days, full time, Jan. 17-22, 1949	60.00
	Intensive Course in Advanced Electrocardiography (Medicine PM-42)	5 days, full time, March 29-April 2, 1949	40.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Electrocardiography	2 weeks, part time, April 1949	100.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Electrocardiographic Interpretation	2 weeks, part time, 2 hours daily, arranged	75.00
New York University-Bellevue Medical Center, Post-Graduate Medical School, 477 First Ave., New York 16 At: Beth Israel Hospital	A-372, Electrocardiography	12 weeks, part time, Thursdays 2-3 p.m., Jan 6-March 24, March 31-June 16, 1949	40.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-373, Practical Electrocardiography for the Practicing Physician	6 weeks, part time, Tuesday 1-4 p.m., Jan. 4-Feb. 8, April 5-May 10, 1949	65.00
	B-345, Electrocardiography	5 days duration, full time, Feb. 28, March 4, 1949	55.00
	A-380, Fundamentals of Electrocardiographic Theory	16 weeks, part time, Thursdays 9-11 a.m., March 3-June 16, 1949	125.00
University of Oregon Medical School, Marquam Hill, Portland 1, Oregon	Electrocardiography	5 days, June 13-17, 1949	50.00
The American College of Physicians, 4200 Pine St., Philadelphia 4 At: Massachusetts General Hospital, Boston	Electrocardiography	1 week, full time, April 25-30, 1949	60.00[1] 120.00[2]
	ELECTROENCEPHALOGRAPHY		
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 7 At: Electroencephalography Laboratory of Colorado Psychopathic Hospital and Associated Laboratories	Electroencephalography[37]	12 weeks, first Monday in March 1949	125.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12 At: Univ. of Illinois—Illinois Neuropsychiatric Institute	Training Course in Electroencephalography	3 months, Winter and Spring quarters	200.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital and Pennsylvania Institute	Electroencephalography	6 consecutive Thursdays, 36 hours 2 weeks, 36 hours Additional week Start first Thursday of October, January, March and May	150.00 200.00 100.00
	ENDOCRINOLOGY		
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	Endocrinology	8 periods, 12 hours, begins April 4, 1949	30.00
University of California Medical School, University Extension, San Francisco 22	Endocrinology, including Diabetes	5 days, full time, June 20-24, 1949, to be announced	To be announced
University of Georgia School of Medicine, University Place, Augusta, Ga.	Endocrinology	May or June (tentative)	Not given
Universit[illegible], Department of Post-grad[illegible] Ann Arbor, Mich. At: [illegible] or, Mich.	Metabolism and Endocrinology	5 days, March 21-25, 1949	30.00
Joint [illegible] Education, Medical Society of the County of Kings, Long Island College of Medicine	Pediatric Endocrinology	8 weeks, part time, beginning April 1949	20.00
At: Beth El Hospital At: Greenpoint Hospital	Sterility[18]	12 weeks, part time, beginning April 1949	40.00
At: Jewish Hospital	Disorders of the Endocrine System	6 weeks, part time, beginning April 1949	40.00
	Female Sex Endocrinology	10 weeks, part time, beginning April 1949	20.00
At: Jewish Sanitarium and Hospitals for Chronic Diseases	Applied Endocrinology	6 weeks, part time, beginning April 1949	30.00
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Endocrinological Diseases (Medicine PM-39)	2 months, part time, Jan. 24-March 21, 1949	30.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Endocrinology	3 weeks, full time, May 1949	150.00
	Physiology of the Endocrine System	1 month, to be arranged	75.00

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Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ENDOCRINOLOGY—Continued			
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-222, Gynecological Endocrinology	Part time, Tuesdays, Thursdays, Saturdays 10 a.m. to 12 p.m., Jan. 4-Feb. 26, March 8-April 30, May 3-June 25, 1949	150.00
	A-309, Endocrinology	Part time, Fridays, 9 to 12 m., Jan. 7-Feb. 25, 1949	45.00
The Association for the Study of Internal Secretions, 1200 N. Walker St., Oklahoma City 3 At: Skirvin Hotel, Oklahoma City	Clinical Endocrinology	6 days, Feb. 21-26, 1949	100.00
The American College of Physicians, 4200 Pine St., Philadelphia 4 At: Tufts College Medical School, Boston	Endocrinology	1 week, full time, June 13-18, 1949	30.00[1] 60.00[2]
University of California Medical Extension, San Francisco	Endocrinology, including Diabetes	5 days, full time, June 20-24, 1949	Not given
ENDOSCOPY			
Georgetown University Medical Center, 3900 Reservoir Rd., N.W., Washington 7, D. C.	Intensive Graduate Course	2 weeks, April 18, 1949	Not given
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12	Bronchoesophagology	Feb. 7-19, 1949	150.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-211, Cystoscopy and Endoscopy	Part time, Mon., Wed., Fri., 10 a.m.-12 m., Jan. 3-Feb. 4, Feb. 14-March 18, April 4-May 9, May 16-June 20, 1949	100.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: University of Pennsylvania Surgical and Anatomical Laboratories, Graduate Hospital	Bronchoesophagology, Gastroscopy and Laryngeal Surgery	2 weeks, 85 hours, June	250.00
FRACTURES			
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Part time Special Course in Fractures	1 day each week for 10 weeks, March 9	125.00
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 *At: Kings County Hospital*	Fractures	10 weeks, part time, beginning April 1949	20.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Fractures and Allied Trauma	3 weeks, full time, Spring semester (1949)	150.00
GASTROENTEROLOGY			
American College of Physicians, 4200 Pine St., Philadelphia 4 At: University of California Medical School	Gastroenterology	5 days, full time, Feb. 7-11, 1949	To be announced
George Washington University School of Medicine, 1335 H St., N.W., Washington, D. C.	Gastroenterology	1 week, full time, May 9-13, 1949	50.00
	Gastrointestinal Problems in Pediatrics	1 week, full time, Feb. 7-11, 1949	60.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Two week Course in Gastroenterology	2 weeks, June 27	100.00
	Two week Personal Course in Gastroscopy and Gastroenterology	2 weeks, full time, March 7, May 16, June 13, July 18	200.00
	Part time Personal Course in Gastroenterology	1 day each week for 10 weeks, April 13	100.00
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich. At: University Hospital, Ann Arbor	Diseases of the Gastrointestinal Tract	5 days, March 14-18, 1949	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26 At: Receiving Hospital	*Gastroenterology*	1 hour/week, March 21-June 18, 1949	15.00
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Beth El Hospital	Gastroenterology (II)	5 weeks, part time, beginning April 1949	20.00
At: Greenpoint Hospital	Gastroenterology (III)	6 weeks, part time, beginning April 1949	20.00
At: Jewish Hospital	Gastroenterology (I)	5 weeks, part time, beginning April 1949	20.00
At: Jewish Sanitarium and Hospital for Chronic Diseases	Gastroenterology (IV)	12 weeks, part time, beginning April 1949	20.00
Columbia University, 630 W. 168th St., New York 32	Medicine PM-2, Gastroscopy[18]	2 months, hours to be arranged, 3 afternoons weekly	250.00
At: Columbia-Presbyterian Medical Center At: Mount Sinai Hospital	Medicine PM-45, Intensive Course in Gastroenterology	5 days, full time, Jan. 10-14, 1949	50.00
	Gastrointestinal Diseases (Medicine PM-32)	2 months, Jan. 26-March 25, 1949	80.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Advanced Gastroscopy	5 weeks, two 2 hour periods each week, to be arranged	200.00
	Gastroenterology	1 month, full time, to be arranged	100.00
	Gastroscopy	2 weeks, part time, to be arranged	200.00
	Physiology and Chemistry of the Gastrointestinal Tract, Digestion	1 month, to be arranged	150.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Gastroenterology	6 weeks, 3 months, Jan. 3, April 4, Oct. 3, 1949	50.00 75.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16 At: Beth Israel Hospital	A-375, Gastroenterology	8 weeks, part time, Mondays 3-5 p.m., Fridays 10-12 m., Jan. 10-March 4, April 4-May 27, 1949	65.00
At: Lenox Hill Hospital	*A-374, Gastroenterology*	7 weeks, *Mondays, Fridays, 10 a.m.-12 m.,* Jan. 3-Feb. 18, April 4-May 20, 1949	60.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-311, Gastroenterology	Part time, Wednesdays, 2 p.m.-5 p.m., Jan. 5-Feb. 23, 1949	45.00
	B-343, Gastroenterology	5 days duration, full time, April 18-29, 1949	100.00
The American College of Physicians, 4200 Pine St., Philadelphia 4 At: University of California Medical School and Stanford University School of Medicine, San Francisco	Gastroenterology	1 week, full time, Feb. 7-12, 1949	30.00[1] 60.00[2]
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Clinical Gastroenterology	16 weeks (500 hours), February 1949	400.00
University of Wisconsin Medical School, 418 N. Randall St., Madison	Observation Course in Gastroenterology	5 days, full time, Feb. 14-18, 1949	25.00
GERIATRICS			
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Geriatrics (Medicine PM-47)	3½ months, part time, Feb. 3-May 19, 1949	65.00

References will be found on page *1276.*

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	HEMATOLOGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Part time Personal Course in Hematology	10 weeks, one day each, April 20	100.00
	Personal Course in Hematology	1 week, June 27	100.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital	Hematology II	2 weeks, full time, May 16-28, 1949	100.00 [3] 5.00 [4]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Hematology Case Study	1 hour/week, March 21-June 18, 1949	50.00
Joint Committee on Post Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Jewish Hospital	Clinical Hematology	8 weeks, part time, beginning April 1949	20.00
Columbia University, 630 W. 168th St., New York 16 At: Mount Sinai Hospital	Medicine PM-35, Hematology	2 months, once a week, 3 hours, Jan. 24-March 21, 1949	60.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Hematology	2 months, Tuesday afternoons, to be arranged	50.00
New York University-Bellevue Medical Center, Post Graduate Medical School, 477 First Ave., New York 19 At: Lenox Hill Hospital	A-377, Hematology	6 weeks, part time, Wednesdays 1-3 p.m. Jan. 5-Feb. 9, April 6-May 11, 1949	50.00
New York University-Bellevue Medical Center, Post Graduate Medical School, 477 First Ave., New York 19	A-306, Clinical Hematology	Part time, Wednesdays 2-4 p.m., Jan. 5-Feb. 23, 1949	30.00
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Ohio State University College of Medicine, Columbus	The Hematologic Emphasis in Clinical Medicine	1 week, full time, Feb. 14-19, 1949	30.00 [1] 60.00 [2]
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Bryn Mawr Hospital Laboratories	Clinical and Laboratory Hematology	6 weeks, start first of February and April 1949	200.00
Baylor University College of Medicine, Department of Medicine, 509 Lincoln Ave., Houston 1, Texas	Hematology	4 days, January 3-6	50.00
	HISTOLOGY		
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Histology	5 weeks, full time, to be arranged	300.00
	HOSPITAL ADMINISTRATION		
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York	Seminar in Hospital Administration [40]	Arranged	Not given
	INDUSTRIAL HEALTH		
Wayne University School of Occupational Health, Detroit	Continuation Study [41]	Every week, first six months of 1949	Not given
	INTERNAL MEDICINE		
University of California, The School of Medicine and University Extension, 405 Hilgard Ave., Los Angeles 24 At: Quonset Hut Conference Room, General Medical and Surgical Hospital, V. A. Center, Los Angeles	Dermatology in Internal Medicine	8 weeks, part time, Jan. 3-Feb. 21, 1949	35.00
The George Washington University School of Medicine and Hospital, 1335 H St., N.W., Washington 5, D. C.	Internal Medicine	5 weeks, full time, April 11-May 13, 1949	250.00
Emory University School of Medicine, 104 Physiology Bldg., Emory University, Ga. At: Grady Memorial Hospital, Emory University Hospital	General Internal Medicine	2 weeks to 1 year, arranged	12.00 [14] 125.00 [5]
Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16	Recent Advances in Internal Medicine	10 days, full time, May 23-June 3, 1949	100.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12	Review Internal Medicine	2 weeks, Jan. 24-Feb. 5, 1949	60.00
Harvard Medical School, 25 Shattuck St., Boston 15 At: Boston City Hospital, Boston	Internal Medicine 2	3 months, daily, all day, beginning June 1, 1949	375.00
At: Massachusetts General Hospital, Boston	Internal Medicine 3	39 days, daily, all day except Saturdays, June 20-July 29, 1949	250.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital	Internal Medicine as Related to Basic Sciences	8 weeks, full time, Jan. 3-Feb. 26, 1949	200.00 [3] 5.00 [4]
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich. At: University Hospital, Ann Arbor	Clinical Internal Medicine	26 days, Jan. 6-April 21, 1949, Thursdays (p.m.)	50.00
	Diseases of the Blood and Blood-Forming Organs	5 days, April 11-15, 1949	30.00
Mississippi State Sanatorium, Sanatorium, Miss.	Internal Medicine and Diseases of the Chest	1 week to 6 months, year round	None
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Diseases of the Liver (Medicine PM-33)	2 months, part time, Jan. 25-March 24, 1949	35.00
	Diseases of the Kidneys (Medicine PM-34)	2 months, part time, Jan. 24-March 21, 1949	15.00
	Diseases of Metabolism (Medicine PM-38)	2 months, part time, Jan. 27-March 25, 1949	40.00
	Symposium on Internal Medicine (Medicine PM-30)	2 months, full time, Jan. 24-March 28, 1949	350.00
Cornell University Medical College, 1300 York Ave., New York 12 At: Bellevue Hospital	Graduate Instruction in Internal Medicine	6 months, full time, admitted first of each month	300.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Internal Medicine	1 month, full time	150.00
		2 months, full time, except July and August	300.00
New York University-Bellevue Medical Center, Post-Graduate Medical School, 477 First Ave., New York 16	A-315, Psychological Aspects of Internal Medicine	Part time, Fridays, 3:30 p.m. to 5 p.m., Jan. 7-Feb. 25, 1949	25.00
	B-300, Seminar in Internal Medicine	8 weeks, full time, Jan. 3-Feb. 25, 1949	300.00
	B-341, Symposium on Internal Medicine	10 days, full time	100.00
		5 days, full time, June 13-24, 1949	55.00
	A-381, Internal Medicine	4 weeks, Jan. 3-28, 1949	60.00
		8 weeks, Jan. 3-Feb. 25, 1949	100.00
		12 weeks, Jan. 3-March 25, 1949	150.00
		4 weeks, April 4-29, 1949	60.00
		8 weeks, April 4-May 27, 1949	100.00
		12 weeks, April 4-June 24, 1949	150.00
		20 weeks, January to June, 1 day a week	60.00 [11]
At: Beth Israel Hospital	A-378, Internal Medicine	8 weeks, part time, Wednesdays and Fridays 2-5 p.m., April 6-May 27, 1949	75.00
New York Post-Graduate Medical School, 303 E. 20th St., New York 3	B-340, Peripheral Vascular Diseases	5 days, full time, March 21-25, 1949	55.00
University of Cincinnati College of Medicine, Eden & Bethesda Aves., Cincinnati, and Society of General Physicians, Cincinnati At: Univ. of Cincinnati College of Medicine, Cincinnati	Medicine, Gynecology and Urology	1 month, twice a week, 2 hours, Feb. 15, 1949 and March 1949	Not given

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Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	INTERNAL MEDICINE—Continued		
Oklahoma State Health Dept., Oklahoma State Medical Association, 3100 North Eastern, Oklahoma City 5, and 210 Plaza Court Bldg., Oklahoma City 3 At: 40 cities and towns over the state	Internal Medicine	10 weeks (1 lecture a week for 10 weeks in each teaching center), two-year program for 1949-1950	20.00
The American College of Physicians, 4200 Pine St., Philadelphia 4 At: *Massachusetts General Hospital, Boston*	Internal Medicine[18]	2 weeks, full time, March 7-19, 1949	60.00[1] 120.00[2]
At: University of Pennsylvania Graduate School of Medicine, Philadelphia	Physiological Basis for Internal Medicine[18]	1 week, full time, May 9-14, 1949	30.00[1] 60.00[2]
Washington State Medical Association, University of Washington Medical School, Seattle At: Harborview Hospital	*Postgraduate Course in Internal Medicin*	*5 days, Jan. 10-14, 1949*	25.00
	MALIGNANT DISEASES		
Local County Medical Society, 1925 Wilshire Blvd., Los Angeles 5; Cancer Commission, California Medical Association, 450 Sutter St., *San Francisco 8; California Division,* American Cancer Society (State Department of Public Health), San Francisco At: In non-metropolitan areas of the state	Cancer Symposium	Either one or two days as selected by the local medical society	None
University of California Medical School, San Francisco 22	Symposium on Tumors	June 27 to June 29, 1949	Not given
American Cancer Society, University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12	Postgraduate Course in Cancer	One day at the U. of Illinois, four other days at other institution in Chicago, three times per year	None
Yale University School of Medicine, 333 Cedar St., New Haven 11, and Connecticut State Medical Society, 258 Church St., New Haven 10 At: Yale University School of Medicine	Surgery 203, Early Diagnosis of Cancer	12 sessions, 2 hours each, March 25-June 10, 1949	45.00
Indiana University School of Medicine, 1040 W. Michigan St., *Indianapolis 7, and Indiana Cancer Society, Indianapolis* At: Indiana University School of Medicine, Indianapolis	Second Annual Post-Graduate *Course in Malignancy*	2 days, full time, April 6 and 7, *1949*	None
Michigan State Medical Society Cancer Committee, 2020 Olds Tower, Lansing 8, and University of Michigan Medical School, Department of Postgraduate Medicine, 109 S. Observatory St., Ann Arbor, Mich. At: University Hospital, Ann Arbor	Cancer	4 days, Jan. 25-28, 1949	25.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Cancer Control	*3 days, March 3-5, 1949*	*To be announced*
	Cancer Control	3 days, June 2-4, 1949	To be announced
Cornell University Medical College, 1300 York Ave., New York 12	Course in Cytologic Diagnosis of Cancer	Not given, limited to 25	100.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B 920, The Basic Problems in Cancer Therapy, for Surgeons[18]	12 days, full time, Jan. 31-Feb. 12, 1949	200.00
Tennessee State Medical Association, 706 Church St., 508 Doctors Bldg., Nashville 3, Tenn. At: Forty-five County Seats and Teaching Centers	Cancer	10 weeks, 2 hours per week, January-September 1949	10.00 2.50[12]
University of Texas School of Medicine, Postgraduate Division, Galveston, Texas	Tumor Course	3½ days, Feb. 2-5, 1949	20.00
	Tumor Conference	4 days, April 4-9, 1949	20.00
University of Utah, Second, South and University Sts., Salt Lake City 1	Symposium on Cancer	Spring Quarter (tentative)	Not given
Medical Society of Milwaukee County and American Cancer Society, 208 E. Wisconsin Ave., 753 Bankers Bldg., Milwaukee 2	Third Annual Milwaukee Cancer Symposium	2 days, April 7, 8, *1949*	*None*
	MEDICINE, GENERAL		
The Medical College of Alabama, 620 S. 20th St., Birmingham 5, Ala.	General Review for General Practitioner	3 days, Spring 1949, exact date not set	None
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles	*Differential Diagnosis and Treatment of Internal Diseases*	12 periods, 18 hours, *beginning Jan. 3,* 1949, Mondays 8-9:30 p.m.	*30.00*
	Varicose Veins	6 periods, 12 hours, begins March 8, 1949, *Thursdays 7-9 p.m.*	25.00
Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles 5	Practical Medicine Series	1½ hours per week, continuously, every Tuesday	None
	Practical Medicine Series	1½ hours per week, continuously, every Wednesday	None
Research Study Club of Los Angeles, Inc., 727 W. 7th St., Los Angeles At: Elks Club, Los Angeles	Eighteenth Annual Mid-Winter Post-Graduate Clinical Convention	2 weeks, Clinical, Jan. 17-28, 1949 Cadaver, Jan. 28-Feb. 1, 1949	75.00 75.00
University Extension in cooperation with University of Calif. Med. Schools, San Francisco and Los Angeles *At: 217 W. First St., Los Angeles*	Infectious Diseases	13 meetings of 2 hours, Jan. 6 weekly to March 31, 1949	None
Colorado State Medical Society, 835 Republic Bldg., Denver 2	[illegible]winter	3 days, March 2, 3 and 4, 1949	Registration Fee
Yale University School of Medicine and Connecticut State Medical Society, 333 Cedar St., New Haven 11, and 258 Church St., New Haven 10 At: Community Hospitals	[illegible]	8 sessions, decided by hospitals	300.00
The George Washington University Medical School and Hospital, *1335 H St., N.W., Washington 5, D. C.*	*General Medicine*	3 weeks, *full time, Jan 31-Feb. 18, 1949*	150.00
	Neoplastic Diseases	1 week, full time, April 4-8, 1949	50.00
	Metabolic Diseases	1 week, full time, April 11-15, 1949	50.00
	Ocular Pathology, Motility and Orthoptics	1 week, *full time, Jan. 10-14, 1949*	150.00
Medical Association of Georgia, 478 Peachtree St., N.E., Atlanta 3, Ga. At: University of Georgia School of Medicine, University Place, Augusta, Ga.	Course for General Practitioners	1 week, March or April	Not given
University of Georgia School of Medicine, University Place, Augusta, Ga.	Annual Course for Negro Physicians	Not given, later half of June 1949	Not given
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	One month Personal Course in Asthma, Hay Fever and Allied Diseases	1 month, first of every month	200.00
	Six month Personal Course in Asthma, Hay Fever and Allied Diseases	6 months, by appointment	500.00
	Two week Intensive Course in General Medicine	2 weeks, full time, *April 4, June 13*	75.00
Chicago Medical Society, 30 N. Michigan Ave., Chicago 2	Clinical Conference	4 full days, March 1-4, 1949	5.00[13]
Educational *Committee, Illinois State Medical Society, 224* S. Main St., Monmouth At: LaSalle, Springfield, Quincy and Duquoin, Illinois	*Postgraduate Conferences*	1 day in length, LaSalle, Spring 1949; Springfield, March 3, 1949; Quincy, Spring 1949; DuQuoin, Spring 1949	None
Vanderburgh *County Medical Society;* Indiana School of Medicine; Evansville College; Indiana State Medical Association, 312 Third and Main Bldg., Evansville 8, Ind.; 1040 W. Michigan St., Indianapolis 7; Evansville, Ind., and 23 E. Ohio St., Indianapolis 4 At: Evansville College, Evansville, Ind.	Graduate Education Program of the Vanderburgh County Medical Society	9 months, one day a month, Jan. 1, 1949	None[35]

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
At: Yale University School of Medicine			
	MEDICINE, GENERAL—Continued		
St. Elizabeth Hospital and Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7 At: Lafayette, Ind.	Postgraduate Medical Education	1 day a month, 2 hours a day, first Tuesday of each month	None
State University of Iowa College of Medicine, University Campus, Iowa City	General Surgery	4 days, probably late April	25.00
University of Louisville School of Medicine, 101 W. Chestnut St., Louisville 2, Ky., and Kentucky State Medical Association, 620 S. Third St., Louisville 2, Ky. At: Louisville General Hospital	Intensive Refresher Course in Medicine and Surgery	5 days, June 1949 (exact dates not scheduled as yet)	25.00
Louisiana State University and Tangipahoa Parish Medical Society, 1542 Tulane Ave., New Orleans 13 At: Independence Charity Hospital, Independence, La	Continuation Course for General Practitioners	22 hours, part time, 1 session every two weeks, Jan. 1-March 22, 1949	None
Flint-Goodridge Hospital of Dillard University, New Orleans	Postgraduate Course for Practicing Physicians	1 week, not given	5.00
Post-Graduate Committee, University of Maryland School of Medicine and County Medical Societies, Lombard and Greene Sts., Baltimore 1 At: University Hospital and County Hospitals in Maryland	Postgraduate Extension Lecture Series	Once a month, 3:30-9:00 p.m., January-May 1949	15.00
Lahey Clinic, 605 Commonwealth Ave., Boston 15	General Clinical Subjects	Wednesdays 7:30-9:30 p.m., throughout year except July and August	None
Lahey Clinic, 605 Commonwealth Ave., Boston 15 At: New England Deaconess and New England Baptist Hospitals	Medical Clinics	Tuesdays and Thursdays 4:45 p.m., Saturdays 11 a.m., throughout year except July and August	None
Michigan State Medical Society, 2020 Olds Tower, Lansing 8, Mich.; University of Michigan Medical School, 1313 E. Ann St., Ann Arbor, Mich.; Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26; Michigan Department of Health, Lansing 4, Mich.	Extramural Course	2 days in Spring of each year, dates for Spring 1949 to be arranged later	No fee
	Extramural Course	2 days in Autumn, 2 days in Spring, Spring 1949 dates not yet determined	None
At: Various cities			
At: Book Cadillac Hotel, Detroit	Michigan Postgraduate Clinical Institute	3 days, March 23, 24, 25, 1949	None
University of Michigan Medical School Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich.	Summer Session Courses in Anatomy, Bacteriology and Biological Chemistry	6 and 8 weeks, June 20-Aug. 13, 1949	30.00 [6]
University of Michigan Medical School Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich. At: University Hospital, Ann Arbor	Rheumatology and Recent Advances in Therapeutics	5 days, March 28-April 1, 1949	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26 At: Wayne County General Hospital	Diagnostic Conference	1 hour/week, March 21-June 18, 1949	15.00
At: Receiving Hospital	Diagnostic Conference	2 hours/week, March 21-June 18, 1949	15.00
At: Wayne County General Hospital	Medical Pathological Conference	1 hour/week, March 21-June 18, 1949	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14	General Medicine	3 days, May 12-14, 1949	To be announced
Missouri State Medical Association, 634 N. Grand Blvd., St. Louis 3 At: Kansas City, Mo.	Scientific Program on General Practice (includes Heart Disease, Trauma, Obstetrics and mixed subjects)	2½ days, March 27-30, 1949	No fee
Washington University School of Medicine, Euclid Ave. and Kingshighway, St. Louis 10	Review Course for General Practitioners	2 weeks, May 1949	Not given
University of Nebraska College of Medicine, 42d St. and Dewey Ave., Omaha 5	Refresher Course for Practicing Physicians	4 days, May 1949	25.00
	Refresher Courses (Medicine, Surgery and Their Allied Specialties)	1 week, first six months of 1949	25.00
Rutgers University, Extension Division, Newark Center, 33 Washington St., Newark 2, N. J.	Postgraduate Medicine	6 weeks, beginning February 1949	Not given
At: Cumberland County Medical Society, Bridgeton, N. J.	Short Postgraduate Courses in Medicine	6 weeks, beginning April 1949	Not given
At: Hudson County Medical Society, Jersey City, N. J.	Short Postgraduate Courses in Medicine	6 weeks, beginning April 1949	Not given
At: Morris County Medical Society, Morristown, N. J.	Short Postgraduate Courses in Medicine	6 weeks, beginning May 1949	Not given
At: Mercer County Medical Society, Trenton, N. J.	Diagnosis and Treatment of Neoplastic Disease	8 weeks, part time, beginning April 1949	30.00
Joint Committee on Post-Graduate Educational Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Brooklyn Cancer Institute, Kings County At: Long Island College of Medicine	Manikin	8 weeks, part time, beginning April 1949	30.00
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Medicine PM-34, Diseases of the Kidneys	2 months, once a week, one hour, Jan. 24-March 21, 1949	15.00
	Medicine PM-33, Diseases of the Liver	2 months, twice a week, one hour, Jan. 24-March 24, 1949	35.00
	Medicine PM-38, Diseases of Metabolism	2 months, once a week, two hours, Jan. 27-March 25, 1949	40.00
New York Academy of Medicine, 2 E. 103rd St., New York 29	Friday Afternoon Lectures	Jan. 7-March 18, 1949	Not given
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Immunology	6 weeks, half time, to be arranged	50.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	General Practitioner's Course	6 weeks, full time, April 4, Oct. 3, 1949	100.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B-337, Diabetes Mellitus, Nephritis and Hypertension	5 days duration, full time, March 14-18, 1949	55.00
	B-550, Diagnosis and Treatment of Trauma	6 days duration, full time, May 9-14, 1949	60.00
	A-1421, Differential Diagnosis with the Slit Lamp [18]	5 days duration, part time, 9 a.m. to 1 p.m., Feb. 28-March 4	75.00
	A-310, Diseases of the Liver and Biliary Tract	Part time, Wednesdays, 11 a.m.-1 p.m., Jan. 5-Feb. 23, 1949	30.00
	A-313, Nephritis and Hypertension	Part time, Thursdays 2 p.m. to 4 p.m., Jan. 6-Feb. 24, 1949	30.00
	Postgraduate Courses in Forensic Medicine	Part time, by arrangement	Not given
	Course C-A, Short Course in Legal Medicine	1 month duration, daily except Saturday, 10-11 a.m.	75.00
	Course D, Intensive Laboratory [illegible] psy	Arranged, daily except Saturday, 10-12 p.m.	75.00 [6]
	C[illegible] in [illegible]	1 month, daily except Saturday, 2-4 p.m., January-April	75.00
	Course F, Toxicology	Arranged	Arranged
	Course G, Research in Toxicology	Arranged	Arranged
	Course H, Lectures on Medical Criminology and Police Science	1 week duration, Mon. through Fri., 10-12 p.m., 2-3:30 p.m., dates arranged	25.00

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

MEDICINE, GENERAL—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Course B, Necropsy and Laboratory Demonstrations	Saturday 10-12 p.m., last Saturday in January to second Saturday in May 1949, minimum period one month	Arranged
	A-307, Problems in Diagnosis	Part time, Mondays, 9 a.m. to 12 m., Jan. 3-Feb. 21, 1949	45.00
St. Mary's Hospital and Council of Rochester Regional Hospitals, 800 Reynolds Arcade Bldg., Rochester 4, N. Y.	Diagnosis and Treatment in General Practice	5 days, full time, March 14-18, 1949	None [14]
	Diagnosis and Treatment in General Practice	5 days, full time, April 25-29, 1949	None [14]
University of North Carolina School of Medicine and Extension Division, Chapel Hill, N. C. *At: Salisbury, Goldsboro, Wilmington*	Medical Postgraduate Extension Course	6 to 8 weeks, one day a week, exact dates not determined, February to May probably	20.00 to 30.00
University of Cincinnati College of Medicine and Society of General Physicians At: University of Cincinnati College of Medicine	Mechanisms of Disease	8 sessions, Tuesday and Thursday a.m. through January 1949	15.00
	Medicine, Gynecology and Urology	1 month, twice a week, Feb. 15, 1949 (tentative)	Not given
	Medicine, Gynecology and Urology	1 month, twice a week, March 1949 (tentative)	Not given
	Laboratory Diagnosis and Practice	1 month, twice a week, May 15, 1949 (tentative)	Not given
	Laboratory Diagnosis and Practice	1 month, twice a week, June 1949 (tentative)	Not given
Medical Society of the State of Pennsylvania, 500 Penn Ave., Pittsburgh At: Various towns	Graduate Education Institute of The Medical Society of the State of Pennsylvania	1 day per week for 5 weeks, Spring 1949	25.00 [33]
Tennessee Valley Post-Graduate Medical Assembly, 409 Doctors' *Bldg., Knoxville*	Postgraduate	Spring 1949 (date not yet set)	5.00
Dallas Southern Clinical Society, Dallas, Texas	Clinical Conference	4 days, full time, March 14-17, 1949	20.00
Prairie View University, Lone Star Medical Association and Texas Tuberculosis Association At: Prairie View University, Prairie View, Texas	Prairie View Postgraduate Medical Assembly	4 days, full time, March 1-4, 1949	None
International Postgraduate Medical Assembly of Southwest Texas, San Antonio	Postgraduate Course	3 days, full time, Jan. 25-27, 1949	15.00
University of Wisconsin Medical School, 418 N. Randall St., Madison	Observation Course in Medicine [18]	*2-6 months, arranged*	100.00 [6]

NEUROLOGY AND PSYCHIATRY

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 23	Neurology	8 periods, 12 hours, beginning Jan. 6, 1949	30.00
University of California Medical School, University Extension, San Francisco At: University of California Medical School	Psychiatry for General Practitioners	5 days, full time, Jan. 31-Feb. 4, 1949	To be announced
Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn. At: Affiliated Hospitals	Psychiatry 200, Second Connecticut Seminar of Neurology, Psychiatry and Related Fields of Medicine	123 lectures, Jan. 3-April 29, 1949 [18]	75.00
At: Southbury Training School, Southbury, Conn.	Pediatrics 201, Pediatric Neurology	8 lectures, April 8-29, 1949	15.00
At: Yale University School of Medicine	Psychiatry 201, *Fundamentals of Analytic Psychology and Psychopathology*	*Every 2 weeks, evenings, Jan. 14-*March 25, 1949	25.00
United States Public Health Service, Washington, D. C.	Courses in Mental Health	Not given	Not given
Catholic University, Department of Psychology and Psychiatry, Washington, D. C. At: St. Elizabeth's Hospital	Clinical Psychiatry	15 weeks, 2 hours weekly, Feb. 1-May 30, 1949	25.00
At: Catholic University	Introductory Rorschach Analysis	15 weeks, 2 hours weekly, Feb. 1-May 30, 1949	25.00
At: Child Center, Catholic University	Psychosomatic Medicine	15 weeks, 2 hours weekly, Feb. 1-May 30, 1949	25.00
	Psychotherapy II	15 weeks, 2 hours weekly, Feb. 1-May 30, 1949	25.00
	Psychotherapy III	15 weeks, 2 hours weekly, Feb. 1-May 30, 1949	25.00
George Washington University Medical School, 1335 H St., Washington 5, D. C.	Psychosurgery	5 days, full time, Jan. 24-28, 1949	50.00
	Psychiatry	2 weeks, *full time, Jan. 31-Feb. 11, 1949*	100.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Part time Personal Course in Clinical Neurology	10 weeks, 1 day each week, April 20, 1949	80.00
Institute for Psychoanalysis, 661 N. Michigan Ave., Chicago At: Illinois Neuropsychiatric Institute	Psychosomatic Demonstrations	January-June 1949, Tuesday afternoons	None
Michael Reese Hospital, Institute for Psychoanalysis, 29th and Ellis Ave., Chicago At: Michael Reese Hospital	Psychopathological Demonstrations	January-June 1949, Monday afternoons	None
Michael Reese Hospital Postgraduate School, *Chicago*	*Rorschach Course* [17]	1 week, *part time, June 6-10, 1949*	40.00
Topeka Institute for Psychoanalysis, 3617 W. Sixth Ave., Topeka, Kan. At: Menninger Clinic	Continuous Case Seminar (Group Control)	92 hours, weekly	Arranged
	Interpretation of Dreams, Parts I and II	18 hours, weekly	Arranged
	Psychoanalytic Literature	46 hours, bi-weekly	Arranged
	Psychoanalytic Contributions to the Theory and Treatment *of Psychoses*	15 hours, weekly	Arranged
	Psychoanalytic Technique, Part II	18 hours, weekly	Arranged
University of Maryland School of Medicine, Lombard and [illegible]	Neuropathology (Laboratory "C")	6 months, full time, arranged	200.00 [26]
[illegible] Department of Mental [illegible] ital	Fourteenth Postgraduate Seminar in Neurology and Psychiatry, Course in Social and *Special Psychiatry*	36 lectures, every Wednesday, March 16-May 11, 1949	None
At: Metropolitan State Hospital, Waltham	Fourteenth Postgraduate Seminar in Neurology and Psychiatry, Review Course in Basic Neurology and Psychiatry	66 lectures, every Friday, March 4-May 20, 1949	None
At: Walter E. Fernald State School, Waltham	Postgraduate Seminar in Neurology and Psychiatry (Pediatric Neuropsychiatry)	20 hours, every other Monday, March 14-May 9, 1949	None
Joint Committee on Post-Graduate Education, *Medical* Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16	*Child Psychiatry*	10 weeks, part time, beginning April 1949	20.00
At: Jewish Hospital	Basis of Neural Function	8 weeks, part time, beginning April 1949	20.00
At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Neurology	8 weeks, part time, beginning April 1949	20.00

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

NEUROLOGY AND PSYCHIATRY—Continued

Institution	Title of Course	Schedule of Course	and/or Tuition Registration Fee
American Institute for Psychoanalysis, 206 West End Ave., New York 23	Clinical Conferences [19]	10 sessions, weekly, beginning Feb. 14, 1949	30.00
	Readings in Psychoanalysis, Part III (The Works of Karen Horney)	12 weekly lectures, beginning April 8, 1949	24.00
	Sexual Problems in Neurosis	6 weekly lectures, beginning Feb. 9, 1949	12.00
	The Analytic Process [19]	15 weekly sessions, beginning Jan. 13, 1949	45.00
At: New School for Social Research, 66 W. 12th St., New York	Neuroses and Psychoses	15 weekly lectures, beginning Feb. 7, 1949	17.50
	Seminar on Personal Case Histories	15 weekly seminars, beginning Feb. 8, 1949	30.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Columbia-Presbyterian Medical Center	Neurology (PM-1), Advanced Neurology [18]	3 months, full time, Jan. 3-April 1, 1949	150.00
	Neurology (PM-1), Advanced Neurology [18]	3 months, full time, April 4-June 30, 1949	150.00
	Neurology (PM-2), Clinical Electroencephalography and Electromyography [18]	3 months, full time, January-March 1949	150.00
At: Mt. Sinai Hospital	Psychiatry in General Medicine (Psychiatry PM-30)	5 months, part time, Feb. 8-June 28, 1949	100.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Neurological and Psychiatric Diagnosis and Treatment in General Practice (B-713)	2 weeks, full time, May 9-21, 1949	100.00
	Neurology and Psychiatry for Pediatricians (B-720) [18]	2 weeks, full time, March 28-April 9, 1949	100.00
New York Psychoanalytic Institute, 245 E. 82nd St., New York 28	Rorschach Seminar # 10	10 sessions, every Thursday night, Jan. 6-March 10, 1949	20.00
	Psychological Problems in Medical Practice, # 32	10 sessions, every Friday night, March 18-May 27, 1949	20.00
William Alanson White Institute of Psychiatry, 12 E. 86th St., New York 28 At: 133 E. 74th St., New York	Seminar on Interpretation of Rorschach Records [22]	8 sessions, weekly, beginning Feb. 2, 1949	20.00
	Social Psychology	11 sessions, Jan. 11, 1949 and every other Tuesday thereafter	20.00
University of Rochester School of Medicine, Strong Memorial Hospital and Council of Rochester Regional Hospitals, Rochester, N. Y.	Psychiatry in General Practice	5 days, full time, dates to be announced	None [14]
University of Oklahoma School of Medicine and Oklahoma State Health Department, Oklahoma City, Okla.	Postgraduate Course in Psychiatry	3 days, May 9-11, 1949	Not given
Philadelphia Psychoanalytic Institute, 2031 Locust St., Philadelphia	Clinical Conferences on Problem Children [23]	5 sessions, Jan.-May 3, 1949	7.50
	Introduction to Child Psychiatry	28 sessions, Jan.-April 26, 1949	30.00
	Orientation Course in Normal Behavior [23]	10 sessions, Jan.-May 17, 1949	10.00
	Professional School Courses for Theory, Therapeutic Applications and Practice of Psychoanalysis [24]	Varies, Jan.-June 1949	413.25 [25]
	Psychopathology of Childhood [23]	11 sessions, Jan.-May 31, 1949	11.00
	Psychoanalysis and Social Institutions [23]	4 sessions, March 31-May 12, 1949	9.00
	The Emotional Development of the Child [23]	9 sessions, Jan.-April 12, 1949	9.00

NEUROSURGERY

Institution	Title of Course	Schedule of Course	and/or Tuition Registration Fee
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Mt. Sinai Hospital	Clinical Neurology and Neurosurgery (Neurology PM-30)	5 days, full time, April 11-15, 1949	60.00

NUTRITION

Institution	Title of Course	Schedule of Course	and/or Tuition Registration Fee
Yale University School of Medicine and Connecticut State Medical Society, New Haven, Conn.	Medicine 203, Nutrition and Diet	11 sessions, March 17-June 11, 1949	40.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Nutrition	1 month, arranged	150.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Nutrition and Metabolism	3 hours a week, March 21-June 18, 1949	35.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Diseases of Metabolism and Nutrition	12 weeks, part time, Jan. 3-March 21, 1949	60.00

OBSTETRICS AND GYNECOLOGY

Institution	Title of Course	Schedule of Course	and/or Tuition Registration Fee
University of California Medical School, University Extension, San Francisco 22	Obstetrics and Gynecology	4 days, full time, July 5-8, 1949	To be announced
The George Washington University School of Medicine and Hospital, 1335 H St., N.W., Washington 5, D. C.	Gynecology	1 week, full time, Feb. 21-25, 1949	50.00
	Obstetrics	1 week, full time, Feb. 14-18, 1949	50.00
Chicago Maternity Center, 1336 Newberry Ave., Chicago 8	Four-month Assistant Residency in Obstetrics (Chicago Mat. Center), Combined Four-Year Residency (between Chicago Maternity Center and Wesley Memorial Hospital)	4 months, 4 years, Assistant-Residency staggered, Residency every 6 months	None
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Two-week Intensive Course in Gynecology	2 weeks, full time, Feb. 21, March 21, April 18, June 20	150.00
	Personal Course on the Vaginal Approach to Pelvic Surgery	1 week, Feb. 14, April 4, May 16 and June 13	100.00
	Two-week Intensive Course in Obstetrics	2 weeks, March 7, April 4, May 16	150.00
	Part time Personal Course in Gynecological Surgery	4 weeks, one day each week, Jan. 13, Feb. 10, April 7, May 19, July 7	80.00
	Part time Practical and Didactic Course in Office Gynecology	4 weeks, one day each week, Jan. 12, Feb. 9, April 6, May 18, July 6	80.00
	Part time Personal Course in Office and General Obstetrics	4 weeks, one day each week, Jan. 5	80.00
	Part time Personal Course in Surgical Obstetrics	4 weeks, one day each week, Feb. 2	100.00
State Dept. of Public Health, State Medical Society, University of Illinois, 1853 W. Polk St., Chicago 12 At: Research and Educational Hospital	Refresher Course in Obstetrics and Gynecology	1 week, full time, second week in July	10.00
State University of Iowa College of Medicine, University Campus, Iowa City	Obstetrics and Gynecology	5 days, March 28-April 1, 1949	35.00
University of Louisville School of Medicine and Kentucky State Medical Association, 101 W. Chestnut St., Louisville 2, Ky., and 620 S. Third St., Louisville 2, Ky.	Intensive Refresher Course in Obstetrics and Gynecology	3 days, June 1949 (exact date not scheduled yet)	25.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12	Review of Gynecology	5½ days, Jan. 17-22, 1949	30.00
	Review of Obstetrics	2 weeks, June 6-18, 1949	60.00
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore 1	Gynecology, Oncology and Female Urology	Not given, arranged	125.00
	Gynecology and Obstetrics "A"	12 weeks, 36 hours per week, arranged	150.00

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1 References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

OBSTETRICS AND GYNECOLOGY—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston 15 At: Boston Lying-In Hospital	Clinical Obstetrics	1 month, full time, March 1949, April 1949, May 1949	150.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Obstetrics	3 days, Jan. 6-8, 1949	To be announced
Columbia University Extension Division, 630 W. 168th St., New York 32 At: Margaret Hague Maternity Hospital	Obstetrics PM-80	3 months, first of every month	350.00[20]
	Obstetrics PM-81, Observation Course	1 month, first of every month	100.00[21]
At: Mount Sinai Hospital	Recent Advances in Gynecology (Gynecology PM-30)	5 days, April 4-9, 1949	65.00
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Cumberland Hospital	Complications of Pregnancy	4 weeks, part time, beginning April 1949	20.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Obstetrics and Gynecology including Manikin Obstetrics and Cadaver Gynecology	2 months, full time, April 4, 1949	250.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-203, Gynecology Diagnosis and Office Treatment	Part time, Mon., Wed., Fri., 2 p.m.-4 p.m., Jan. 3-Feb. 4, Feb. 14-March 18, April 4-May 9, May 16-June 20, 1949	75.00
At: Beth Israel Hospital	A-204, Gynecology	16 weeks, part time, Mon.-Fri., 8:30-12 m., Wed., 1:30-4 p.m., Jan. 17-May 6, 1949	250.00
	A-206, Gynecology for General Practitioners	12 weeks, part time, Mondays and Thursdays, 10-11:30 a.m., May 2-June 13, 1949	65.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-223, Vaginal Cytology[18]	Part time, Tuesdays 12-1 p.m., Thursdays 9-12 m., Jan. 4-Feb. 25, March 8-April 29, May 3-June 24, 1949	100.00
	A-211, Surgical Anatomy as Applied to Operative Gynecology	Part time, Tuesdays, Thursdays, Saturdays, 11 a.m.-12 m., Feb. 1-March 1, April 5-May 7, 1949	200.00
	B-200, Seminar in Gynecology	2 months, full time, Jan. 3-Feb. 26, March 7-April 30, May 2-June 25, 1949	300.00
	C-121, Gynecological Pathology[18]	16 weeks, part time, Tuesdays, Thursdays 2:30-4:30 p.m., Jan. 4-March 1, 1949	100.00
At: Lenox Hill Hospital	C-159, Histopathology for Gynecologists	5 weeks, part time, Tuesday and Friday, 8-9 p.m., March 1-April 1, 1949	50.00
University of Cincinnati College of Medicine and Society of General Physicians, Eden and Bethesda Aves., Cincinnati 29	Office Gynecology and Urology	8 sessions, 10-12 a.m., each Tues. and Thurs. morning thru month of May	15.00
Oklahoma City Obstetrical and Gynecological Society and The University of Oklahoma School of Medicine, 800 E. 13th St., Oklahoma City 4	Second Annual Review in Obstetrics and Gynecology	1 day, Jan. 15, 1949	Not given
University of Oklahoma School of Medicine, Oklahoma State Department of Health, 800 E. 13th St., Oklahoma City 4 At: University of Oklahoma School of Medicine	Postgraduate Course in Obstetrics	3 days, March 21-23, 1949	25.00
University of Oregon Medical School, Marquam Hill, Portland 1, Oregon	Obstetrics	1 week, Jan. 24-28, 1949	50.00
	Gynecology	5 days, April 11-15, 1949	50.00
Oregon State Board of Health and Oregon State Medical Society, 11th and Salmon Sts., Portland 5, Ore.	Refresher Lectures in Pediatrics and Obstetrics	3 hours pediatrics, 3 hours obstetrics, May 16-27, 1949 (tentative)	None
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Obstetrics-Gynecology	8 months, October-May, yearly	800.00
Dallas Southern Clinical Society, 433 Medical Arts Bldg., Dallas 1, Texas	Obstetrics and Gynecology	3 days, Jan. 10-12, 1949	25.00
Southwestern Medical College and Parkland Hospital, 2211 Oak Lawn Ave., Dallas 4, Texas	Ob-Gyn Pathology and Clinical Review	Part time, 2 hours a week, October to May yearly	Not given
University of Texas School of Medicine Post-Graduate Division, 912 Avenue B, Galveston, Texas	Obstetrics	5½ days, March 21-26, 1949	25.00
University of Wisconsin Medical School, 418 N. Randall St., Madison	Observation Course in Obstetrics and Gynecology[18]	2-6 months, arranged	100.00[6]

OPHTHALMOLOGY

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	Ophthalmology	8 periods, 12 hours, begins Feb. 2, 1949, Wednesdays 8-9:30 p.m.	30.00
University of Florida, Department of Medicine Graduate School, 2033 Riverside Ave., Jacksonville, Fla. At: Miami, Fla.	Seminar in Ophthalmology and Otolaryngology	6 days, Jan. 10-12 (Ophthalmology) Jan. 13-15 (Otolaryngology)	40.00
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago 14	Postgraduate Conference in *Neuromuscular Anomalies of the Eyes*[18]	6 days, May 1-6, 1949	50.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Four-week Course in Refraction Methods[18]	4 weeks, to be announced	275.00
	One-week Course in Ocular Fundus	1 week, full time, to be announced	75.00
	Two-week Intensive Course in Ophthalmology[18]	2 weeks, full time, to be announced	200.00
	Two-week Clinical Course in Ophthalmology	2 weeks or 4 weeks, available first of every week, except when other courses in Ophthalmology are in progress	50.00 100.00
	Part time Course in Ophthalmic Surgical Technique	5 weeks, one day each week, March 22	100.00
	Part time Course in Ophthalmoscopy of Common Conditions	3 weeks, one day each week, May 10	45.00
State University of Iowa, University Campus, Iowa City	Conference on Squint	6 days, May 23-28, 1949	150.00
Foundation for Vision, Inc., The Ophthalmological Study Council, 520 Commonwealth Ave., Boston 15 At: Portland, Maine	The Lancaster Courses sponsored by The Ophthalmological Study Council	2 months, 2 weeks, 2 days, June 25-Sept. 10, 1949	300.00
Harvard Medical School and Massachusetts Eye and Ear Infirmary, 25 Shattuck St., Boston 15 At: Harvard Medical School	Fundamentals in Refraction and Ocular Motility	1 month, daily, all day except Saturday afternoons, Jan. 31-Feb. 26, 1949	150.00
Tufts College Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Neuroophthalmology	20 hours per week for two weeks or full time one week, March 14-26, 1949	75.00[3] 5.00[4]
	Ophthalmology	4 weeks, 3 mornings a week, Jan. 10-Feb. 4, 1949	75.00[3] 5.00[4]
At: Boston Dispensary	Ophthalmology	4 weeks, mornings only, May 2-27, 1949	50.00[3] 5.00[4]
University of Michigan Medical School Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich.	Ophthalmology Conference	3 days, March 7-9, 1949	25.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Ophthalmology	5½ days, Jan. 24-29, 1949	To be announced
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Jewish Sanitarium and Hospital for Chronic Diseases	Ophthalmoscopy	8 weeks, part time, beginning April 1949	20.00

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	OPHTHALMOLOGY—Continued		
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Montefiore Hospital	Ophthalmology (PM-60)	2 months, once a week, two hours, Jan. 3-Feb. 28, 1949	30.00
	Ophthalmology (PM-61), Perimetry	2 months, once a week, two hours, March 14-May 9, 1949	30.00
At: Mt. Sinai Hospital	Symposium in Ophthalmology (Ophthalmology PM-13)	1 month, full time, April 25-May 21, 1949	200.00
New York Polyclinic Medical School and Hospital, 341 W. 50th St., New York 19	Ophthalmology, including Cadaver Courses and Refraction	3 months, full time, April 4-Oct. 3, 1949	600.00
	Ophthalmology, including Cadaver Ophthalmol. & Refraction	3 months, part time, April 4-Oct. 3, 1949	275.00
	Clinical Ophthalmology	6 weeks, full time, April 4-Oct. 3, 1949	100.00
	Clinical Ophthalmology	3 months, full time, April 4-Oct. 3, 1949	150.00
	Ophthalmology	6 weeks, part time, April 4-Oct. 3, 1949	50.00
	Ophthalmology	3 months, part time, April 4-Oct. 3, 1949	75.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Motor Anomalies of the Eye (B-1413, Part I) [18]	6 days, full time, March 7-12, 1949	100.00
	Motor Anomalies of the Eye (B-1414, Part II) [30]	5 days, full time, March 14-18, 1949	75.00
	Ophthalmic Neurology (A-1417) [18]	5 days, part time, Feb. 28-March 4, 1949	50.00
	Surgery of the Eye (B-1419) [18]	6 days, full time, March 21-26, 1949	100.00
New York University College of Medicine and National Society for Prevention of Blindness, New York At: New York University College of Medicine	Occupational Aspects f Ophthalmology	1 week, part time, Jan. 24-29, 1949	Not given
New York Post-Graduate Medical School, 303 E. 20th St., New York 3	Differential Diagnosis with the Slit Lamp (A-1421) [18]	5 days, part time, Feb. 28-March 4, 1949	75.00
University of Oregon Medical School, Oregon Academy of Ophthalmology and Otolaryngology, Portland	Oregon Academy Postgraduate Convention [18]	1 week, full time, March 1949	50.00
Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va.	Spring Graduate Course in Ophthalmology, Otology, Rhinology, Laryngology, Facio-Maxillary Surgery, Bronchoscopy and Esophagoscopy [18]	1 week, full time, April 4-9, 1949	75.00 40.00 [15]
	ORTHOPEDIC SURGERY		
George Washington University School of Medicine and Hospital, 1335 H St., Washington, D. C.	Bone and Joint Surgery	1 week, full time, March 28-April 1, 1949	50.00
Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11	Bone and Joint Pathology	3 months, full time, Jan. 3-March 31, 1949	300.00
Tulane University of Louisiana School of Medicine, 1430 Tulane Ave., New Orleans, La.	Basic Science as Applied to Orthopedics	5 months, Feb. 1-June 30, 1949	300.00
Columbia University, 630 W. 168th St., New York 32 At: Hospital for Joint Diseases	Orthopedic Surgery PM-80, Survey of the Essentials of Orthopedics	2 months, once a week, all day, March 3-May 12, 1949	100.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Anatomy for the Orthopedic Surgeon	100 hours, arranged	150.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Pathology in Relation to Orthopedic Surgery (C-161)	12 weeks, part time, Feb. 8-April 26, 1949	90.00
	Seminar in Orthopedic Surgery (B-500) [18]	10 days, full time, Jan. 3-14, 1949	125.00
	Orthopedics in General Practice (B-520)	6 days, full time, May 16-21, 1949	60.00
	Functional Anatomy in Relation to Orthopedics (A-522)	2 weeks, part time, Jan. 17-28, 1949	75.00
University of Oregon Medical School, Marquam Hill, Portland 1, Ore.	Orthopedic Surgery	5 days, May 23-27, 1949	50.00
	OTOLARYNGOLOGY		
Georgetown University School of Medicine, 3900 Reservoir Rd., Washington 7, D. C.	Graduate Course in Otolaryngology and Bronchoscopy	2 weeks, April 18-30, 1949	150.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Informal Course in Otolaryngology	2 weeks, full time, every week except when formal course in session	50.00
	Informal Course in Otolaryngology	1 month, full time, every week except when formal course in session	100.00
University of Illinois Department of Otolaryngology, 1853 W. Polk St., Chicago 12	Two-week Intensive Course in [illegible]	2 weeks, full time, April 4, 1949	200.00
	[illegible]	Not given	150.00 [18]
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor	[illegible]	3 days, full time, March 10-12, 1949	25.00
Hansel Foundation, 1229 Missouri Theatre Bldg., St. Louis	[illegible]	5½ days, May 30-June 4, 1949	150.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Applied Anatomy for the Oto[illegible]	150 hours, arranged	275.00
New York Polyclinic Medical School and Hospital, 341 W. 50th St., New York 19	[illegible]	6 weeks, part time, April 4, 1949	75.00
	[illegible]	3 months, part time, April 4, 1949	100.00
	[illegible] ver Courses and Refraction	3 months, full time, April 4, 1949	600.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Diagnostic Procedures in Otolaryngology (A-600)	Part time, any time there is vacancy	40.00 [32]
	Symposium on Otolaryngology (B-620) [18]	2 weeks, full time, April 25-May 7, 1949	150.00
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati 29	Operative Course in Otolaryngology [18]	1 week, April 26-30, 1949	125.00
University of Oregon Medical School, Oregon Academy of Ophthalmology and Otolaryngology, Portland	Oregon Academy Postgraduate Convention [18]	1 week, full time, March 1949	50.00
Gill Memorial Eye, Ear and Throat Hospital, 711 S. Jefferson St., Roanoke, Va.	Twenty-Second Annual Spring Graduate Course [18]	1 week, April 4-9, 1949	40.00 [15] 75.00
	OTOLOGY		
Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va.	Spring Graduate Course in Ophthalmology, Otology, Rhinology, Laryngology, Facio-Maxillary Surgery, Bronchoscopy and Esophagoscopy [18]	1 week, full time, April 4-9, 1949	75.00 40.00 [15]
	OTORHINOLARYNGOLOGY		
Georgetown [illegible] School of Medicine, 3900 Reservoir [illegible]	Intensive Graduate Course	2 weeks, April 18, 1949	Not given
[illegible] of Medicine, 1040 W. Michigan St., [illegible]	Anatomical and Clinical Course in Otorhinolaryngology [18]	2 weeks, full time, April 2-15, 1949	200.00
[illegible] ital, 307 Second Ave., New York 3	Rhinoplasty and Otoplasty [18]	1 month, March 1949	500.00
[illegible] Society of Ophthalmology and Otolaryngology, Charlottesville	Ear, Eye, Nose and Throat	6½ months, Jan. 1-July 15, 1949	Not given
Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va.	Spring Graduate Course in Ophthalmology, Otology, Rhinology, [illegible] illary [illegible] and [illegible]	1 week, full time, April 4-9, 1949	75.00 40.00 [15]

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PATHOLOGY		
University of California School of Medicine, and University Extension, Los Angeles and San Francisco At: Los Angeles	Surgical Pathology [33]	Spring 1949	Not given
At: General Medical and Surgical Hospital, V. A. Center, Los Angeles	General Surgical Pathology Review	16 meetings, 2 hours each, March 1-April 21, 1949	60.00
Yale University School of Medicine and Connecticut State Medical Society, New Haven At: Yale University School of Medicine	Pathology (200)	11 sessions, 2 hours each, Jan. 4-March 15, 1949	45.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Special Courses in Surgical Pathology for Intensive Concentration in a Specific Field	1 or 2 weeks, by appointment	15.00 [34]
	Personal Course in Pathology and Laboratory Medicine [18]	10 weeks, part time, one day a week, April 13, 1949	100.00
	Personal Course in Surgical Pathology, Gross & Microscopic [18]	10 weeks, part time, one day a week, March 16, 1949	100.00
	Course in Clinical Pathology	10 weeks, part time, one day a week, March 23, 1949	75.00
	Personal Course in Surgical Pathology [18]	2 weeks, full time, every 2 weeks	150.00
	Personal Course in Surgical Pathology [18]	4 weeks, full time, every 2 weeks	250.00
	Course in Gross and Surgical Pathology [18]	6 months, full time, by appointment	500.00
	Course in Gross and Surgical Pathology [18]	12 months, full time, by appointment	900.00
	Course in Gross and Microscopic Pathology [18]	12 months, full time, by appointment	500.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Gynecologic Pathology	3 months, part time, 1 afternoon a week, March 21-June 18, 1949	50.00
	Pathology of Children's Diseases	3 months, part time, 1 afternoon a week, March 21-June 18, 1949	50.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Surgical Pathology	3½ months, part time, Jan. 29-May 14, 1949	100.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Clinical Pathology	26 hours, arranged	100.00
	Pathology	16 weeks, half time, arranged	200.00
	Advanced Pathology for Pathologists	Varies according to need of applicant	Not given [35]
New York Polyclinic Medical School and Hospital, 341 W. 50th St., New York 19	Practical Laboratory Instruction in Pathology	Arranged	Arranged
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital	Histopathology for Gynecologists	6 weeks, part time, March 1-Apr. 8, 1949	50.00
	Pathology for Surgeons (C-158)	5 weeks, part time, Feb. 28-March 31, 1949	50.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Surgical Pathology (C-155) [18]	15 weeks, part time, March-June 1949	200.00
University of Utah School of Medicine, 2nd So. and University Sts., Salt Lake City 1	Surgical Pathology	Winter quarter 1949	50.00
	PEDIATRICS		
University of Colorado Medical Center, Colorado State Health Department and Colorado State Medical Society, Denver At: University of Colorado Medical Center	Medical Care of the Premature Infant	3 days, full time, April 7-9, 1949	10.00 Regis.
Yale University School of Medicine and Connecticut State Medical Society, New Haven, Conn.	Pediatrics (200)	12 sessions, 2 hours each, Jan. 6-March 24, 1949	60.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Formal Intensive Course in Pediatrics [18]	4 weeks, full time, April 4, 1949	150.00
	Pediatrics	4 weeks, full time, April 1949	150.00
	Informal Course in General Pediatrics	2 weeks, full time, first of every week except when formal course is in session	60.00
	Informal Course in General Pediatrics	1 month, full time, first of every week except when formal course is in session	100.00
Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16	Recent Advances in Pediatrics	2 weeks, full time, May 16-28, 1949	100.00
University of Louisville School of Medicine and Kentucky State Medical Association, Louisville At: Louisville General Hospital	Intensive Refresher Course in Pediatrics	3 days, June 1949	25.00
Louisiana State University School of Medicine and Louisiana State Board of Health, New Orleans At: Bastrop, Minden, Natchitoches, Ruston	Diseases of Children in General Practice	12 hours, Jan. 10-13, 1949	None
	Diseases of Children in General Practice	12 hours, Feb. 14-17, 1949	None
At: Louisiana State University School of Medicine	Review of Pediatrics for Rural Physicians	5 days, full time, March 21-25, 1949	None
Tulane University of Louisiana School of Medicine, Division of Graduate Medicine, 1430 Tulane Ave., New Orleans 13	Review of Pediatrics [18]	5½ days, Feb. 7-12, 1949	30.00
Harvard Medical School, 25 Shattuck St., Boston 15 At: Massachusetts General Hospital	Pediatrics (1A)	4 months, full time, Feb. 1-May 31, 1949	400.00
Tufts College Medical School, Postgraduate Division, 416 Huntington Ave., Boston At: Boston Floating Hospital and Boston Dispensary	Pediatrics	2 weeks, full time, March 7-19, 1949	75.00 5.00 [4]
	Clinical Pediatrics	4 weeks, mornings, March 7-Apr. 2, 1949	60.00 5.00 [4]
University of Michigan Medical Department of Postgraduate Medicine, Ann Arbor	Pediatrics	3 days, April 13-15, 1949	20.00
University of Minnesota Medical School, Minneapolis 14 At: Center for Continuation Study	Pediatrics	3 days, Feb. 7-9, 1949	Not given
	Pediatrics	3 days April 7-9, 1949	Not given
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Beth El Hospital	Clinical Pediatrics	5 weeks, part time, beginning April 1949	30.00
New York State Department of Health, Albany At: University of Buffalo School of Medicine	Intensive Refresher Course in Pediatrics for General Practitioners Participating in Child Health Programs	2 weeks, arranged, Spring 1949	Not given
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Clinical Pediatrics (PM-30)	9 weeks, part time, Feb. 1-April 12, 1949	80.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Clinical Pediatrics	1 month, full time, all year	150.00
	Clinical Pediatrics	3 months, full time, all year	250.00
	Clinical Pediatrics	6 months, full time, all year	450.00
	Clinical Pediatrics	9 months, full time, all year	650.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	Clinical Pediatrics (B-410)	4 weeks, full time, Jan. 3-29, 1949	150.00
	Clinical Pediatrics (B-410)	4 weeks, full time, March 7-April 2, 1949	150.00
	Clinical Pediatrics (B-410)	4 weeks, full time, May 2-28, 1949	150.00
	Practical Clin. Pediatrics (B-413)	4 weeks, full time, Jan. 31-Feb. 26, 1949	125.00
	Practical Clin. Pediatrics (B-413)	4 weeks, full time, April 4-30, 1949	125.00
	Practical Clin. Pediatrics (B-413)	4 weeks, full time, May 31-June 25, 1949	125.00

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Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PEDIATRICS—Continued		
New York University-Bellevue Medical Center Post Graduate Medical School, 477 First Ave., New York 16	Review of Clin. Pediatrics (B-415)	6 days, full time, Feb. 14-19, 1949	60.00
	Review of Clin. Pediatrics (B-415)	6 days, full time, April 18-23, 1949	60.00
	Review of Clin. Pediatrics (B-415)	6 days, full time, June 13-18, 1949	60.00
At: Lenox Hill Hospital	Pediatrics (A 421)	8 weeks, part time, Tuesday and Friday, Jan. 4-Feb. 25, 1949	50.00
	Pediatrics (A-421)	8 weeks, part time, Tuesday and Friday, April 5-May 27, 1949	50.00
Southern Pediatric Seminar, Inc., Saluda, N. C.	Southern Pediatric Seminar	2 weeks, full time, July 18-30, 1949	25.00
University of Oregon Medical School, Marquam Hill, Portland 1, Ore.	Pediatrics	5 days, Feb. 14-18, 1949	50.00
Oregon State Board of Health and Oregon State Medical Society, 11th and Salmon Sts., Portland 5, Ore	Refresher Lectures in Pediatrics and Obstetrics	3 hours pediatrics, 3 hours obstetrics, May 16-27, 1949 (tentative)	None
Meharry Medical College, 1005 18th Ave, North at Meharry Blvd., Nashville 8, Tenn.	Pediatrics	5 days, March 21-25, 1949	25.00
University of Texas School of Medicine, Postgraduate Division, 912 Avenue B, Galveston	Pediatrics	5½ days, April 11-16, 1949	25.00
University of Wisconsin Medical School, 418 N. Randall St., Madison	Observation Course in Obstetrics	2-6 months, arranged	100.00 [6]
	Postgraduate Course in Pediatrics	5 days, full time, March 14-18, 1949	25.00
	PHARMACOLOGY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Survey of Pharmacology	1 week, one hour, Jan. 3-March 10, 1949	15.00
	PHYSICAL MEDICINE		
Columbia University, 630 W. 168th St., New York 32 At: Columbia-Presbyterian Medical Center	Physical Medicine PM-1, Seminar in Physical Medicine	5 days, Feb. 14-Feb. 18, 1949	40.00
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Kings County Hospital	Physical Medicine	5 weeks, part time, beginning April 1949	20.00
Columbia University, 630 W. 168th St., New York 32 At: Columbia-Presbyterian Medical Center	Physical Medicine PM-100, Review of Physical Medicine	5 months, full time, Jan. 3-April 23, 1949	250.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Physical Medicine	4 weeks, arranged	100.00
Institute of Rehabilitation and Physical Medicine, and New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B-1701, Rehabilitation and Physical Medicine	12 weeks, full time, Monday through Friday, 9-5 p.m., Jan. 3-March 25, 1949	200.00
		24 weeks, full time, Monday through Friday, 9-5 p.m., Jan. 3-June 17, 1949	400.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Physical Medicine	3 days, March 28-30, 1949	To be announced
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Physical Medicine	8 months, October-May yearly	800.00
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Physical Medicine	5 days, Feb. 28-March 5, 1949	25.00 [27] 15.00 [28]
	Physical Medicine	1 week, March 7-11, 1949	25.00 [27] 15.00 [29]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26 At: Grace Hospital	Physical Medicine	1 afternoon, one week, March 21-June 18, 1949	35.00
	PHYSIOLOGY		
Yale University School of Medicine and Connecticut State Medical Society, 258 Church St., New Haven, Conn., and 223 Cedar St., New Haven 11, Conn. At: Yale University School of Medicine	Physiology 200, Brain Tumor Registry	Not given, arranged	65.00
The George Washington University Medical School and Hospital, 1335 H St., N.W., Washington 5, D. C.	Surgical Physiology	1 week, full time, March 7-11, 1949	50.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12 At: Swedish Covenant Hospital	Clinical Physiology	16 weeks, one hour per week, Jan. 15-May 15, 1949	25.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12	Clinical Physiology (Division of Basic Medical Science Course for Specialty Training)	6 hours per week, Winter quarters 2 hours per week, Spring quarters	100.00 [5]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Altitude Physiology	1 hour, one week, March 21-June 18, 1949	15.00
	Blood	3 hours, one week, March 21-June 18, 1949	35.00
	Survey of Medical Chemistry	1 hour/week, March 21-June 18, 1949	15.00
	Intermediary Metabolism	1 hour/week, March 21-June 18, 1949	15.00
Columbia University, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Physiology of Water and Electrolyte Balance (Physiology PM-31)	2 months, part time, Feb. 2-April 8, 1949	40.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Physiology of the Cardiovascular System and Blood	1 month, part time, to be arranged	75.00
	Physiology of Respiration	1 month, to be arranged	75.00
	Physiology of Nervous System	2 weeks, to be arranged	50.00
	Physiology of Special Senses	1 month, to be arranged	75.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B-342, Normal and Pathological Physiology, Functional and Chemical Aspects	10 days, full time, March 28-April 8, 1949	100.00
	A-304, Normal and Pathological Physiology, Functional and Chemical Aspects	Part time, Wednesdays, 9-11 a.m., Jan. 5-Feb. 23, 1949	30.00
	PHYSIOLOGICAL CHEMISTRY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Physiological Chemistry Seminar	1 hour, one week, March 21-June 19, 1949	15.00
	POLIOMYELITIS		
Georgia Warm Springs Foundation, Warm Springs, Ga.	Care of Acute and Convalescent Poliomyelitis	1 week, Jan. 3, April 4, 1949	None
D. T. Watson School of Physical Therapy, Leetsdale, Pa., and University of Pittsburgh School of Medicine At: D. T. Watson School of Physical Therapy	Recent Advances in Treatment of Poliomyelitis	4 days, full time, arranged	None
University of Wisconsin Medical School, 418 N. Randall St., Madison	The Diagnosis and Therapy of Infantile Paralysis	5½ days, full time, June 20-25, 1949	25.00
	PROCTOLOGY		
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	Proctology	10 periods, 20 hours, beginning Jan. 6, 1949, Thursdays 8-10 a.m.	50.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Part time Practical and Didactic Course in Proctoscopy and Sigmoidoscopy	3 weeks, 1 day each week, Jan. 11, Feb. 1, March 15, April 19, May 24, June 21	50.00
Tufts College Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Boston Dispensary and Mount Auburn Hospital	Proctology I	6 days, full time, April 25-30, 1949	40.00 [3] 5.00 [4]
	Proctology II	4 weeks, full time	250.00 [3] 5.00 [4]
	Proctology III	1 month, mornings, Jan. 31-Feb. 26, Feb. 28-March 26, March 28-April 23, June 6-July 2, 1949	100.00 [7] 5.00 [4]

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PROCTOLOGY—Continued		
University of Minnesota Center for Continuation Study, Minneapolis 14	Proctology	5½ days, May 23-May 28, 1949	To be announced
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Jewish Hospital	Proctology	6 weeks, part time, beginning April 1949	40.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Proctology	6 weeks, part time, April 4, 1949	75.00
	Proctology including Cadaver Proctology	*6 weeks, part time, April 4, 1949*	200.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	A-019, Proctology	8 weeks, part time, Mon. thru Fri. 10-12 m., Jan. 3-Feb. 25, April 4-May 21, 1949	125.00
	PUBLIC HEALTH		
University of Michigan, School of *Public Health*, 109 S. Observatory St., Ann Arbor, Mich.	School Health	4 months, Mon., Feb. 7-Fri., June 4, 1949	Not given
	Public Health Administration	4 months, Mon., Feb. 7-Fri., June 4, 1949	Not given
	Maternal and Child Health	4 months, Mon., Feb. 7-Fri., June 4, 1949	Not given
	Industrial Health	4 months, Mon., Feb. 7-Fri., June 4, 1949	Not given
	Epidemiology	4 months, Mon., Feb. 7-Fri., June 4, 1949	Not given
	Tuberculosis Control	4 months, Mon., Feb. 7-Fri., June 4, 1949	Not given
New York State Department of Health and Albany Medical College, 76 State St., Albany 1, N. Y.	Extension Course for Health Officers, Grade II	1 year, monthly, entrance at any time	38.80
University of North Carolina, School of Public Health, Chapel Hill, N. C.	Public Health	9 months, September-June 1949	100.00[8]
Ohio Department of Health, Oberlin, Ohio	Orientation in Public Health Administration	1 to 3 weeks, full time, by special arrangement	None
Dept. Industrial Hygiene, School of Medicine, and Dept. Industrial Engineering of School of Medicine, University of Pittsburgh, 3911 O'Hara St., Pittsburgh At: University of Pittsburgh, School of Engineering	Industrial Hygiene Engineering	32 hours, beginning Feb. 1, 1949	20.00
At: University of Pittsburgh, School of Medicine	Industrial Toxicology	32 hours, beginning Feb. 1, 1949	20.00
	Fellowship in Industrial Medicine	*18 months, full time, beginning any time*	*No fee*[31]
	RADIOLOGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	*Clinical Course in Roentgenology*[18]	2 weeks or	70.00
		1 month starting third Monday every month	125.00
	Diagnostic Roentgenology	8 months, by appointment	500.00
	Clinical Interpretation of X-Ray Findings[18]	10 weeks, one day each week, March 17	80.00
	Clinical and Lecture Course in Roentgenology[18]	2 weeks, first Monday of every month	125.00
	Twelve month Course in X-Ray Diagnosis and Therapy[18]	12 months, by appointment	750.00
	X-Ray Therapy	1 week, by appointment	60.00
		2 weeks, by appointment	110.00
		1 month, by appointment	200.00
		2 months, by appointment	300.00
Tufts College Medical School Postgraduate Division, 30 *Bennet St., Boston* At: Pratt Diagnostic Hospital	Radiology	4 days, full time, May 10-13, 1949	30.00[3] 5.00[4]
University of Michigan Medical School Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich.	Diagnostic Roentgenology	5 days, April 18-22, 1949	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26 At: St. Mary's Hospital	*Beginning Physics in Radiology*	Jan. 3-March 19, 1949	15.00
Wayne University College of Medicine, 1516 St. Antoine St., Detroit At: Receiving Hospital	Medical X-Ray Conference	1 hour per week, March 21-June 18, 1949	15.00
At: Wayne County General Hospital	Medical X-Ray Conference	1 hour per week, March 21-June 18, 1949	15.00
Columbia University, 630 W. 168th St., New York 32 At: [illegible] Center	Radiology PM 1, Radiological Physics[18]	2 months, twice a week, one hour, March 2-April 29, 1949	25.00
Joint [illegible] Education, Medical Societ[illegible] ong Island College of *Medicine*, 1313 Bedford Ave., Brooklyn 16 At: Beth El Hospital	Roentgen Diagnosis	8 weeks, part time, beginning April 1949	20.00
At: Jewish Hospital	Cardiovascular Roentgenology	8 weeks, part time, beginning April 1949	20.00
At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Radiology	10 weeks, part time, beginning April 1949	20.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Radium and Roentgen Therapy	6 weeks, half time, every 6 weeks except during July and August	150.00
	Diagnostic Roentgenology	6 weeks, half time, every 6 weeks except during July and August	150.00
New York *Polyclinic Medical School and Hospital*, 341-353 W. 50th St., New York 19	*Radiology*	*3 months, April 4, 1949*	300.00
New York University-Bellevue Medical Center Post-Graduate Medical Center, 477 First Ave., New York 16 At: Beth Israel Hospital	A-811, Roentgenology	8 weeks, part time, Tues. and Thurs., 2-4 p.m., April 5-May 26, 1949	50.00
At: Bellevue Medical Center	A-813, Diagnostic Radiology	12 weeks, part time, Mon., Wed., Fri., 4-6 p.m., March 7-May 27, 1949	100.00
	C-816, Radiobiology	20 weeks, part time, Feb. 3-June 16, 1949, Thursdays 4-6 p.m.	125.00
University of Oregon Medical School, Marquam Hill, Portland 1, Ore.	Radiology	5 days, March 28-April 1, 1949	50.00
The American College of Physicians, U. S. Army, U. S. Public Health Service, Veterans Administration, Atomic Energy Commission, and Armed Forces Special Weapons Project, 4200 Pine St., Philadelphia 4 At: U. S. Army Medical Center, Washington, D. C.	Medical Aspects of Nuclear Energy[42]	8 days, full time, Jan. 24-Feb. 1, 1949	40.00[1] 80.00[2]
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Radiology	8 months, October-May, yearly	800.00
Baylor University College of Medicine and Atomic Energy Commission, 509 Lincoln Ave., Houston 1, Texas	Medical Aspects of Radiobiology	4 hours weekly, Jan. 1-July 1, 1949	To be arranged
[illegible] School of Medicine, 561 N. Fifteenth	Application of Radioisotopes to Medicine	6 days, Jan. 11, 18 and 25, Feb. 1, 8 and 15, 1949	To be announced
[illegible] Association, 1018 N. Jefferson	Essentials of Chest X-Ray Films and Their Interpretation	6 sessions, 1 day a week, each session lasting 2 hours; first class Jan. 8-Feb. 12, 1948; second class Feb. 19-March 25, 1949	None
	SURGERY		
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	*Minor Orthopedic Surgery*[18]	8 periods, 12 hours, Thursdays 8-9:40 p.m., April 7, 1949	30.00
University of California School of Medicine and University Extension, 405 Hilgard Ave., Los Angeles 24	General Orthopedic Surgery	6 weeks, full time, begins Jan. 31, 1949	150.00[33]
At: General Med. and Surg. Hosp., V. A. Center, Los Angeles	Surgical Pathology	Spring 1949	Not given
	General Surgical Pathology Review	16 meetings, 2 hours, March 1-April 12, 1949	60.00

References will be found on page 1276.

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	SURGERY—Continued		
Yale University School of Medicine and Connecticut State Medical Society, 333 Cedar Street, New Haven 11, and 258 Church St., New Haven 10 At: Yale University School of Medicine	Surgery 201, Traumatic Surgery	12 sessions, 2 hours, Jan. 5-March 23, 1949	45.00
The George Washington University Medical School and Hospital, 1335 H St., N.W., Washington, D. C. (5)	General Surgery	7 weeks, full time, Feb. 21-April 8, 1949	350.00
	Abdominal Surgery	2 weeks, full time, March 14-25, 1949	100.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Part time Personal Course in Surgical Pathology, Gross and Microscopic	10 weeks, 1 day a week, March 16, 1949	100.00
American College of Surgeons, 40 E. Erie St., Chicago At: Rice Hotel Houston, Texas	Sectional Meeting	Not given, Jan. 14-15, 1949	Not given
At: Edgewater Gulf Hotel, Edgewater Park, Miss.	Sectional Meetings	Not given, Jan. 7-8, 1949	Not given
At: Hotel President, Kansas City, Mo.	Sectional Meetings	Not given, Feb. 11-12	Not given
At: Statler Hotel, Buffalo	Sectional Meeting	Not given, March 21-22	Not given
At: Statler Hotel, Washington, D. C.	Sectional Meeting	Not given, March 15-16	Not given
At: Olympic Hotel, Seattle	Sectional Meeting	Not given, April 21-22	Not given
At: MacDonald Hotel, Edmonton, Alberta	Sectional Meeting	Not given, April 12-13	Not given
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Surgical Technique with Practice, Clinical Surgery, Surgical Anatomy and Preoperative and Postoperative Management [18]	4 weeks, Feb. 7, March 7, April 4, May 2, June 6, July 11	300.00
	Personal Course in Esophageal Surgery [18]	1 week, June 13	150.00
	Personal Course in Breast and Thyroid Surgery [18]	1 week, June 27	150.00
	Personal Course in Surgery of the Colon and Rectum [18]	1 week, March 7, April 11, May 16, June 13	100.00
	Personal Course in Thoracic Surgery [18]	1 week, June 20	100.00
	Surgical Technique with Practice	10 weeks, one day each week, Feb. 23	200.00
	Clinical Surgery	10 weeks, one day each week, March 10	150.00
	Personal Course in Surgical Diagnosis, Preoperative and Postoperative Management	10 weeks, one day each week, April 6	100.00
	Personal Lecture Course with Discussion in General Surgery	10 weeks, one day each week, March 24	100.00
	Esophageal Surgery	10 weeks, one day each week, March 8	150.00
	Treatment of Varicose Veins	2 weeks, one day each week, first and third Wednesdays each month	40.00
	Personal Course in Thoracic Surgery	10 weeks, one day each week, April 6	100.00
	Personal Course in Gallbladder Surgery	1 week, May 2, June 20	100.00
	Treatment of Varicose Veins	10 hours, one week, starts every Monday	40.00
	Course in Fractures and Traumatic Surgery	2 weeks, April 18, June 13	125.00
	Surgical Anatomy on the Cadaver and Clinical Surgery	2 weeks, Feb. 21, March 21, April 18, May 16, June 20, July 25	150.00
	Surgical Technique with Practice	2 weeks, Jan. 24, Feb. 21, March 21, April 18, May 16, June 20, July 25	200.00
	Intensive Review Course Considering Basic Principles in General Surgery	2 weeks, full time, April 4	200.00
Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16	Recent Advances in Surgery	1 week, full time, May 2-7, 1949	50.00
Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11	Basic Surgery	3 months, full time, April 1-June 30, 1949	300.00
American Trudeau Society, 1790 Broadway, New York 19 At: University of Indiana School of Medicine, Indianapolis	Postgraduate Course (Chronic Surgery)	1 week, March 7-12, 1949	Not given
Tulane University School of Medicine, Division of Graduate Medicine, 1430 Tulane Ave., New Orleans 12	Review of General Surgery and Traumatology	5½ days, Jan. 10-15, 1949	30.00
Tufts College Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Ziskind Research Laboratories	Principles of Surgical Technique	6 weeks, part time, May 31-July 8, 1949	200.00 [3] 5.00 [4]
University of Michigan Medical School Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich.	Clinical Exercises for Practitioners	25 days, Oct. 20, 1948-May 4, 1949 (Wednesdays), 25 days	50.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26	Surgery Seminar	1 hour, one week, March 21-June 18,	15.00
University of Minnesota Center for Continuation Study,	General Surgery	3 days, May 9-11, 1949	To be announced
V. 168th St., New York 32	Surgery PM 100, Recent Developments in Surgery	5 days, full time, May 16-20, 1949	50.00
Flower and Fifth Avenue Hos- New York City	Thoracic Surgery	3 weeks, full time, Spring semester	325.00
	Surgical Technique	50 hours, to be arranged	375.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York 19	Combined Surgical Course including Cadaver Surgery and Gynecology	3 months, full time, April 4, 1949	350.00
	Clinical Surgery	6 weeks, full time, April 4, 1949	100.00
	Clinical and Operative (Cadaver) Surgery	6 weeks, full time, arranged	200.00
New York Post-Graduate Medical School, 477 First Ave., New York 16	B-530, Diagnosis and Treatment of Trauma	6 days, full time, May 9-14, 1949	60.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B-556, Basic Course in Traumatic Surgery [18]	6 weeks, full time, May 16-June 24, 1949	300.00
	B-560, Seminar in Traumatic Surgery [18]	2 weeks, full time, March 7-19, 1949	125.00
	B-901, Review of General Surgery for Surgeons [18]	4 weeks, full time, April 4-30, 1949	300.00
	B-924, Recent Advances in Surgery	10 days, full time, March 7-17, 1949	175.00
At: Beekman-Downtown Hospital	Surgery of Trauma A-570	10 weeks, part time, Thursdays 1-5 p.m., April 7-June 9, 1949	150.00
University of Oregon Medical School, Marquam Hill, Portland 1, Ore.	General Surgery	5 days, March 7-11, 1949	50.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Oral Surgery and Anesthesia	8 months, October-May, yearly	800.00
	Surgery	8 months, October-May, yearly	800.00
Washington State Medical Association, 327 Cobb Bldg., Seattle 1 At: Harborview Hospital	General Surgery	5 days, March 7-11, inclusive	25.00
University of Wisconsin Medical School, 418 N. Randall Ave., Madison	Observation Course in Surgery [18]	2-6 months, arranged	100.00 [6]

References will be found on page 1276.

Postgraduate Courses for Practicing Physicians—January 1, 1949 to July 15, 1949—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	THERAPY		
Yale University School of Medicine and Connecticut State Medical Society, 333 Cedar St., New Haven 11, and 258 Church St., New Haven 10 At: Yale University School of Medicine	Therapeutics 200, Modern Drugs and Common Problems in Therapy	16 sessions, 2 hours each, Feb. 1-May 31, 1949	55.00
The George Washington University School of Medicine and Hospital, 1335 H St., N.W., Washington 5, D. C.	Therapeutics	1 week, full time, Jan. 31-Feb. 4, 1949	50.00
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16 At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Therapeutics	7 weeks, part time, beginning April 1949	40.00
University of Oregon Medical School, Marquam Hill, Portland 1, Ore.	*Applied Therapeutics*	*5 days, March 14-18, 1949*	50.00
University of Utah, 2nd South and University Sts., Salt Lake City 1	Recent Advances in Therapeutics	Spring quarter (tentative)	Not given
	UROLOGY		
College of Medical Evangelists, Boyle and Michigan Aves., Los Angeles 33	General Urology	9 periods, 13½ hours, beginning Jan. 5, 1949, Wednesdays 8-9:30 p.m.	35.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Ten day Practical Course in Cystoscopy	10 days, Jan. 10, Jan. 24, Feb. 7, Feb. 21, March 7, March 21, April 4, May 2, May 16, June 6, June 20, July 11, July 25	150.00
	Two week Course in Genitourinary Surgery	2 weeks, April 18	225.00
American Urological Association, Central Committee on Graduate Instruction, 899 Madison Ave., Memphis 3, Tenn. At: New Orleans, La.	Graduate Course of Instruction, Southeastern Section, American Urological Association	5 days, 6 hours, March 1949	50.00
Detroit Urological Society, University of Michigan Medical School Department of Postgraduate Medicine, 1313 E. Ann St., Ann Arbor, Mich. At: University Hospital, Ann Arbor, Mich.	Urology Conference	2 days, Jan. 19-20, 1949	15.00
Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 16	Urology	1 month, part time, begins April 1949	50.00
American Urological Association, Central Committee on Graduate Instruction, 899 Madison Ave., Memphis 3, Tenn. At: Buffalo, New York	Postgraduate Urological Seminar	5 days, 6 hours, Jan. 3-8, 1949	50.00
Department of Urology, James Buchanan Brady Foundation of the New York Hospital, 525 E. 68th St., New York	Postgraduate Course in Urology	31 weeks, Jan. 1, 1949	500.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York City	Anatomy of the Urogenital System	130 hours, to be arranged	300.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16 At: Beth Israel Hospital	A-1020, Urology	6 weeks, part time, Mon.-Sat. 8:30-11 a.m., Tues. and Thurs. 2:30-4:30 p.m., Jan. 17-March 26, April 18-May 28, 1949	100.00
New York University-Bellevue Medical Center Post-Graduate Medical School, 477 First Ave., New York 16	B-1010, Advanced Course in Urology [18]	2 months, full time, Jan. 3-Feb. 26, 1949	300.00
University of Cincinnati College of Medicine and Society of General Physicians, Eden and Bethesda Aves., Cincinnati 29	Office Gynecology and Urology	8 sessions, 10-12 a.m., each Tuesday and Thursday mornings thru month of May	15.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Urology	8 months, October-May yearly	800.00
	VENEREAL DISEASE		
U. S. Public Health Service and Arkansas State Board of Health, Hot Springs National Park, Ark.	[illegible] Disease	1 week, April 1949 and October 1949 of each year	None
		8 weeks, Spring 1949	Not given
University of Michigan School of Public Health, Ann Arbor, Mich.	Venereal Disease Control	Not given	Not given
Bureau of Social Hygiene, Department of Health, New York City	Postgraduate Course in Diagnosis and Treatment of Venereal Diseases	15 sessions, Fall 1948, Spring 1949	None
	Practical Seminar in Diagnosis, Treatment and Control of Venereal Disease	2 mornings a week, optional, all year round	None
University of Pennsylvania School of Medicine, the U. S. Public Health Service Institute for the Study of Venereal Disease, 237 Medical Laboratories, Philadelphia 4	Essential Basic Training Course	6 months, not given	Arranged 800.00
	Intensive Review Course	4 weeks, full time, not given	Arranged 800.00
	Refresher Course in Venereal Disease Control	10 days, not given	Arranged 800.00
	Venereal Disease Review Course	3 weeks, not given	Arranged 800.00
	Staff Assistantships as Part of Fellowships in Dermatology and Syphilology	Not given	Arranged 800.00

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1. Members.
2. Non-members.
3. Tuition.
4. Registration.
5. Per quarter.
6. Per month.
7. $25.00 for two weeks.
8. Third week additional $65.
9. $75 for two weeks, $125 for one month.
10. Per week.
11. One day a week for 20 weeks group—the latest possible date for entrance into this group will be Friday, Feb. 11, 1949.
12. For interns.
13. Chicago Medical Society, members free, non-members $5.00.
14. Paid by Council of Rochester Regional Hospitals.
15. For half course.
16. Clinical neurology, Jan. 3-Feb. 28; psychiatry, March 7-May 2; analytic psychology-psychopathology, Jan. 14 and 28, Feb. 11 and 25, March 11 and 25; Pediatrics 201, pediatric neurology, April 8-29, 1949.
17. Open to qualified clinical psychiatrists and psychologists.
18. Specialists only.
19. Advanced candidates in training.
20. Full maintenance.
21. Maintenance not provided.
22. Students with one basic course in Rorschach.
23. For those without training in psychoanalysis.
24. For those with some training in psychoanalysis.
25. For all courses.
26. Plus $10.00 lab. fee.
27. M.D.'s, $25.

[illegible] therapists, registered [illegible] $15.

[illegible] ve taken 1413.

31. No fee. Fellowship honorarium $200 per month.
32. Each section (3 sections, a, b and c). May take one or more sections.
33. This course is designed especially for those surgeons preparing for the second part of the examination by the American Board of Surgery.
34. Per hour.
35. This course is available only to physicians certified by American Boards.
36. No charge for room and board.
37. Open to M.D.'s from medical schools approved by Council on Medical Education and Hospitals of the American Medical Association who have had at least one year of acceptable training in physiology, neurology or psychiatry.
38. There may be a nominal registration fee.
39. Per year.
40. Open to Hospital Administrators.
41. Members of Local Medical Profession.
42. No charge to medical officers of the participating agencies.
43. Per semester.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

56:205-408 (Aug.) 1948. Partial Index

Further Studies on Electrical Potentials of Human Uterus in Labor. L. V. Dill and R. M. Maiden.—p. 213.
*Microscopic Observations of Placental Barrier in Transplacental Erythrocytotoxic Anemia (Erythroblastosis Fetalis) and in Normal Pregnancy. B. S. Kline.—p. 226.
Progressive Resistance Exercise in Functional Restoration of Perineal Muscles. A. H. Kegel.—p. 238.
*Intestinal Changes Secondary to Irradiation of Pelvic Malignancies. J. M. Maas.—p. 249.
Tissue Localization and Excretion Routes of Radioactive Dibromestrone. G. H. Twombly, L. McClintock and M. Engelman.—p. 260.
Effects of Various Estrogenic Preparations on Vaginal Mucosa. Mildred Vogel, T. H. McGavack and J. Mellow.—p. 269.
Role of Uterine Motility in Essential Dysmenorrhea. W. K. Diehl and J. M. Hundley Jr.—p. 281.
Outcome of Pregnancy Following Vaginal Operations. W. F. Finn.—p. 291.
Solid Teratoma of Ovary, with Report of 5 Cases. E. R. Novak.—p. 300.
Theca-Cell Tumors of Ovary with Report of 15 Cases and Review of Literature. W. R. Knight III.—p. 311.
Smear Diagnosis of in Situ Carcinoma of Cervix. F. W. Foote and Katherine Li.—p. 335.
*Retreatment of Pregnant Woman for Syphilis Following Penicillin. Is Additional Therapy Necessary When Effective Treatment Has Been Given Prior to Conception. N. R. Ingraham Jr., Elizabeth Kirk Rose, J. H. Stokes, and others.—p. 340.
Prediction of Day of Human Ovulation by Rat Test as Confirmed by Fifty Conceptions. E. J. Farris.—p. 347.
Vaginal Delivery Under Heavy Pontocaine Spinal Anesthesia. R. E. Ahearn and J. W. Huston.—p. 353.
Vaginal Cytologic Survey in Gynecologic Cancer. V. Parrett, C. Small and L. Winn.—p. 360.
Shock from Posterior Pituitary Extract. A. E. Kanter and A. H. Klawans.—p. 366.
Breech Presentation and Delivery: Review of 445 Consecutive Cases in General Hospital. H. Meyer.—p. 375.

Microscopic Observations of Placental Barrier.—On microscopic examination of placentas from 15 patients with erythroblastosis fetalis Kline found in all numerous breaks in the barrier associated with hemorrhage from the fetal circulation into the maternal intervillous spaces. Nucleated red blood cells of the fetus were observed in areas of recent hemorrhage in the regional intervillous spaces. The breaks in the placental barrier involved the surface and villi and trunks and apparently resulted from the occlusion of peripheral capillaries or larger vessels by agglutinated red blood cells and fibrin. Regional to the areas of vascular occlusion, the overlying epithelium showed degenerative or necrotic change and in places erosion associated with hemorrhage from the fetal circulation into the regional intervillous spaces. Coincidentally, access of maternal blood to the fetal circulation was afforded. The mixture of bloods is stopped quickly, apparently by the formation of a clot at the site of injury. Since the erythroblastosis is a secondary manifestation, the designation "erythroblastosis fetalis" is no longer justified. Furthermore, it was found that destruction of the incompatible fetal red blood cells in the disease occurs in part by phagocytosis. The term "congenital hemolytic anemia," therefore, is not entirely accurate and "transplacental erythrocytotoxic anemia" is suggested as a better name for the disease. Microscopic examination of the placentas in 213 cases in the last half of the normal pregnancy showed in the barrier in all numerous breaks of the same type as observed in the cases of erythroblastosis fetalis. The demonstration of numerous breaks in the placental barrier in erythroblastosis fetalis in the last half of pregnancy adds evidence confirming the studies of Levine, which established erythroblastosis fetalis as a disease caused by the destruction of fetal red blood cells by antibodies produced in the mother to some incompatible factor within the fetal red blood cells.

Intestinal Changes Following Irradiation of Pelvic Cancers.—Maas reviewed 600 cases in which irradiation was used for cancers in the pelvic area. There were 523 cases of radiation sickness and 70 cases in which permanent rectal changes developed. Onset and course of radiation sickness are unpredictable and their management unsatisfactory. Higher doses of radiation therapy tend to produce permanent rectal lesions earlier and of a more serious nature. Radium is a more serious offender than are roentgen rays. Factitial proctitis makes up the bulk of permanent rectal changes secondary to irradiation of the pelvis for pelvic cancers. The region of the rectosigmoid junction is most frequently involved by factitial proctitis. Colostomy is employed to check excessive bleeding or relieve obstructions. The results obtained frequently are negligible. Rectal stenosis following radiation to pelvic cancers occurred forty-eight times in the 600 cases. The process is irreversible. One case of fibrosis without stricture was encountered. Rectovaginal fistula, which occurs secondarily to metastatic invasion of the bowel and devitalization of tissue in the rectovaginal septum, developed in 13 cases. Secondary carcinoma of the bowel occurred in 10 cases. One primary adenocarcinoma of the rectum developed in a case of squamous cell carcinoma of the cervix.

Retreatment of Pregnant Woman for Syphilis.—Ingraham and his associates say that in a group of 52 mothers treated for syphilis with penicillin before but not during pregnancy, 46 apparently normal and no syphilitic living infants resulted. The three abortions, one miscarriage, one stillbirth and one neonatal death which occurred could not be attributed to syphilis, and probably resulted from other causes. Speiser and his co-workers recently found 1 syphilitic infant among 84 similarly studied pregnancies. Syphilis occurred in this infant when a mother who was delivered nine months after being treated for symptomatic early syphilis was not adequately observed during pregnancy and was subsequently found to have an abnormal response to therapy. Under the ideal antepartum care which dictates monthly physical examination and blood serologic test for the woman once syphilitic, it is apparently safe to permit the expectant mother to go untreated during her pregnancy, assuming normal response to treatment. Retreatment of the syphilitic pregnant woman should be instituted if the clinical or laboratory response is not normal, or in circumstances in which there is some risk of infection of the fetus and anticipated antepartum care may fall below the optimum. The authors do not feel that final conclusions can be drawn from a short period of observation of the limited material collected, but they hope that such a report may serve as a stimulus to the collection of additional data which in the aggregate may give a definite answer to the question of re-treating the syphilitic woman because of pregnancy, when she has had an acceptable course of penicillin for this disease prior to conception.

American Journal of Psychiatry, New York

104:673-752 (May) 1948

Effect of Thyroid Therapy on Conditional Reflex Function in Hypothyroidism. W. H. Gantt and W. Fleischmann.—p. 673.
Combined Insulin Coma and Electric Convulsive Therapy in Schizophrenia. W. A. Horwitz and L. B. Kalinowsky.—p. 682.
Psychopharmacologic Study of Schizophrenia and Depression: IV. Influence of Electric Convulsive Therapy on Sodium Amytal Response of Electroencephalogram. J. S. Gottlieb, J. R. Knott and L. L. Kimble.—p. 686.
Cerebrospinal Fluid Changes in Electroshock Treatment of Psychoses: Spectrophotometric and Enzyme Studies. M. Spiegel-Adolf, P. H. Wilcox and E. A. Spiegel.—p. 697.
Effect of Electric Shock on Mental Efficiency. P. E. Huston and C. R. Strother.—p. 707.
Somatotypes in Relation to Dementia Praecox. L. Bellak and R. R. Holt.—p. 713.
Frequency of Syphilitic Primary Optic Atrophy in Dementia Paralytica: Clinico-Anatomic Study. W. L. Bruetsch.—p. 725.
Clinical Significance of Rorschach Test. C. E. Johnson Jr. and J. F Sherman.—p. 730.

Anesthesiology, New York

9:345-458 (July) 1948. Partial Index

Hemolytic Transfusion Reactions. M. J. Nicholson.—p. 345.
New Piperidine Derivatives as Local Anesthetics. C. L. Rose, T. P. Carney and K. K. Chen.—p. 373.
Anesthetic Management of Patients with Fracture of Mandible. S. G. Hershey and E. A. Rovenstine.—p. 381.
Music as Supplement in Nitrous Oxide-Oxygen Anesthesia. H. Cherry and I. M. Pallin.—p. 391.
Trends in Regional Anesthesia. C. S. Hellijas and R. M. Tovell.—p. 400.
Endobronchial Anesthesia by Means of Improved Endobronchial Airway. H. S. Ruth, D. D. Grove and K. K. Keown.—p. 422.
Evaluation of Monocaine Formate in Production of Low Spinal Anesthesia. R. M. Nesbit and W. J. Butler.—p. 430.
Spinal Anesthesia with Procaine-Pontocaine Solution: 100 Cases. F. W. Marvin.—p. 434.

Bulletin of Johns Hopkins Hospital, Baltimore

83:119-186 (Aug.) 1948

Nitrogen Metabolism of Gram-Positive Bacteria. E. F. Gale.—p. 119.
*Sulfhydryl Compounds and the Sickling Phenomenon: Preliminary Report. L. Thomas and C. A. Stetson Jr.—p. 176.

Sulfhydryl Compounds and the Sickling Phenomenon.—According to Thomas and Stetson the methods which are in current use for the routine laboratory diagnosis of sickle cell disease are based on the widely accepted concept that the sickling phenomenon is brought about by the reduction of hemoglobin in the red cell. The authors studied the effect of a variety of reducing agents on sickle cells with the purpose of devising a dependable means for the rapid diagnosis of sickle cell disease. It was found that sulfhydryl compounds, notably hydrogen sulfide, BAL (2,3-dimercaptopropanol) and cysteine, caused complete sickling within less than a half hour. It is suggested that sulfhydryl compounds may be of value in the laboratory diagnosis of sickle cell disease because of the rapidity with which reliable and reproducible results can be obtained.

Endocrinology, Springfield, Ill.

42:427-494 (June) 1948

Effect of Methylthiouracil on Oxygen Consumption of Thyroid, Liver and Kidneys. U. Borell and H. Holmgren.—p. 427.
Hypervolemia in Mice Bearing Granulosa Cell Growth; Time of Onset and Some Associated Physiologic and Chemical Changes. H. Sobel and J. Furth.—p. 436.
Effect of Ultraviolet Irradiation on Biologic Activity of alpha-Estradiol Benzoate. J. J. Trentin and C. W. Turner.—p. 448.
Histologic Observations on Relation of Insulin to Deposition of Glycogen in Adipose Tissue. D. W. Fawcett.—p. 454.
Plasma Inorganic Iodide, a Chemical Regulator of Normal Thyroid Function. J. Wolff and I. L. Chaikoff.—p. 468.
Effect of Partial Hepatectomy on in Vivo Activation of Triphenyl-Chloroethylene. A. Segaloff.—p. 472.

Hawaii Medical Journal, Honolulu

7:447-544 (July-Aug.) 1948

*Epidemiological Significance of Behavior of Poliomyelitis in Warmer Climates. W. L. Aycock.—p. 461.
*Sudden Death in Filipino Men: Unexplained Syndrome. A. V. Majoska.—p. 469.
Intra-Uterine Fetal Asphyxia. C. C. McCorriston.—p. 474.
Adoption: Complex Community Responsibility. M. A. Busch.—p. 477.

Poliomyelitis in Warmer Climates.—According to Aycock, the spread of the virus of poliomyelitis is extensive and is the result of ordinary, unavoidable and probably irreducible contact. Infection with this virus is preponderantly benign, the one serious sequel of infection, paralysis, occurring in only a small fraction of those exposed. In the tropics the evidence indicates that in terms of parasitism adaptation between virus and host is even more nearly balanced. Widespread exposure to the virus, more frequently during the persistence of equally widespread maternal immunity, apparently results in more frequent modified infection, but still with propagation of virus, with resultant active immunity to be passed on to the offspring for repetition of the cycle. Thus in warm climates a high degree of commensalism with the virus has been attained. In poliomyelitis there are a number of selectivities seen in the occurrence of paralytic disease in the few of them exposed to the virus which indicate that this "complication" of the ordinarily subclinical infection is determined primarily not by circumstances of exposure to the virus but by autarceologic influences. The mechanism through which a lower incidence of paralysis occurs in warmer climate seems to be the operation in nature of the principle of variolation rather than the principle of vaccination. It is suggested that the virus of poliomyelitis requires host conditions of warm weather or warm climate both for disease production and for multiplication and hence propagation. Such a conception, under which this virus could be active for only a brief part of the year in more temperate climates and throughout the year in warmer climates, could account for the more rapid and extensive dissemination of the virus in warmer climates.

Sudden Death in Filipino Men.—Majoska reports the occurrence of sudden death in 81 young Filipino men. There were 51 such deaths in the years 1937 to 1944 and 30 from 1945 to 1948, with no particular seasonal occurrence. The highest incidence of these deaths was observed between the ages of 30 and 34 years. There was a consistent lack of exposure to noxious industrial substances in practically all cases. The men retired in apparently the best of health and died sometime during the night. The one person dying in the day time was one who worked at night and died at noon in his sleep. The death is usually preceded by sounds of gasping, groaning, moaning or choking. Cyanosis, generalized visceral congestion, subpleural and subpericardial petechial hemorrhages were revealed on necropsy. Acute hemorrhagic pancreatitis was the chief postmortem observation, but it is not known whether this was cause or effect. Frequently the stomach is dilated by a large amount of partially digested food. Food, poisons, supernatural forces, intestinal parasites, hypoglycemia and reflex shock possibly initiated by sudden fright or nightmare have been suggested as possible causes but have been fairly well eliminated. The syndrome apparently does not affect women or men of other races.

Journal of Gerontology, Springfield, Ill.

3:87-180 (April) 1948

Aging and Calcification of Human Coronary Artery. A. I. Lansing, H. T. Blumenthal and S. H. Gray.—p. 87.
Acid Phosphatase Concentration of Prostatic Fluid in Young, Middle-Aged, and Old Individuals. E. Kirk.—p. 98.
Aneurysms of Iliac Arteries. Mary C. Long.—p. 105.
Liver Cirrhosis in Aged. J. Bock.—p. 111.
Serum Protein Fractionation in Normal Old Individuals. J. Bock.—p. 119.
Kidney in Old Age: Preliminary Communication. T. H. Howell and A. P. Piggot.—p. 124.
Community Planning for the Aged: Outline of Working Hypothesis. Hertha Kraus.—p. 129.

Journal of International College of Surgeons, Chicago

11:343-442 (July-Aug.) 1948

*Prefrontal Lobotomy: Complications and Their Treatment. J. W. Watts and W. Freeman.—p. 343.
*Theoretical and Clinical Aspects of Vagotomy. F. Mandl.—p. 351.
Recent and Old Fractures of Internal Malleolus. J. J. Callahan.—p. 354.
Anterior Capsulectomy for Contractures of Elbow. P. Willner.—p. 359.
Infections of Extremities. C. J. Bellis.—p. 363.
Preoperative and Postoperative Care in Carcinoma of Rectum and Pelvic Colon. J. P. Fleming.—p. 378.
Postpartum Dissection and Repair of Preexisting Perineal Relaxation. A. P. Hudgins.—p. 386.
Epithelization Time After Gastrectomy. K. Katrakis and A. Kartsonis.—p. 392.
Clinical Evaluation of New Technic in Sclerotherapy of Varicose Veins. *E. J. Orbach.—p. 396.*
Pseudocysts of Pancreas and External Drainage. F. M. Berkay.—p 403.
Evaluation of Gastroscopy in Study of Cancer of Stomach. W. E. Ricketts.—p. 425.

Prefrontal Lobotomy.—Watts and Freeman performed prefrontal lobotomy on 531 mental patients with only 12 operative deaths (2.3 per cent). Secondary operations were performed in 70 cases with no operative death. This brings the total number of operations up to 610 with an operative mortality slightly under 2 per cent. Prefrontal lobotomy is a simple but precise operation. It has been necessary to terminate the operation before completion in only 4 cases. Incontinence and inertia occur in almost every patient and constitute the main nursing problems during the short hospital stay. Excitement is rare. Operative hemorrhage was sufficient to require enlargement of the bony opening to control it in 6 patients. Hemiparesis developed in 4 and proved permanent in 2. Chronic intracerebral hematoma developed in 3 patients and a hygroma in 1. Hemorrhage was the cause of death in 3 patients operated on (0.5 per cent). Convulsions are the most embarrassing sequela of prefrontal lobotomy and occurred in 66 (12.3 per cent) of the authors' patients. Further analysis revealed that 7.2 per cent had attacks after a single operation, but 47 per cent developed convulsions after secondary operations. A majority can be controlled by anticonvulsive therapy. Although the patient does not complain, morphine withdrawal symptoms may be severe when the drug is withheld after lobotomy.

Vagotomy.—Mandl performed vagotomy by the subdiaphragmatic route on 101 patients with ulcers of the stomach, pylorus, duodenum and jejunum and anastomotic recurrences after resection. Sixty-nine patients had ulcers of the pylorus and duodenum. In 13 the operation was combined with gastrojejunostomy. In all cases the roentgen findings cleared up after vagotomy. Twelve cases were complicated by severe coronary and heart disease, chronic lung disease, epilepsy, thyrotoxicosis, megacolon and pregnancy; in no case was the complicating condition aggravated by vagotomy. Only 1 of the 101 patients operated on, most of them poor risks, died on the tenth postoperative day of causes unrelated to the operative procedure. Gastric and intestinal atony could be controlled with ease. Twenty-five patients sooner or later had diarrhea. All patients were relieved after some weeks or days of treatment with opiates, betaine hydrochloride with pepsin or sulfonamide compounds. Examination of the diastase level in the urine and the blood sugar level in 20 patients showed that the diastase rose postoperatively to values on an average of 1 : 128 in all patients, while the blood sugar level rose only in 10. Diastase levels returned to normal after five to nine days, and blood sugar levels after five days. On the basis of the balance between vagal and sympathetic innervation of the stomach a new test was developed demonstrating that all vagal fibers are cut; the assumption is that if vagotomy is complete no rise in gastric acidity will occur after sympathetic block. The author believes that vagotomy will in time have a solid place in the surgery of peptic ulcer.

Journal of Nat. Cancer Inst., Washington, D. C.

8:201-241 (April-June 1948). Partial Index

Histopathologic Study of Mode of Inhibition of Cellular Proliferation by Urethane: Effect of Urethane on Wound Healing. C. C. Lushbaugh, J. W. Green Jr. and J. B. Storer.—p. 201.
Mammary Tumors in Mice Presumably Free of Mammary-Tumor Agent. H. B. Andervont and Thelma B. Dunn.—p. 227.

Journal of Pediatrics, St. Louis

33:141-266 (Aug.) 1948

*Antibody Formation in Early Infancy Against Diphtheria and Tetanus Toxoids. Jean V. Cooke, Jean Holowach, J. E. Atkins Jr. and J. R. Powers.—p. 141.
Galactosemia. E. O. Goldstein and J. M. Ennis.—p. 147.
Study of Physical Activity in Juvenile Diabetic Patients. R. L. Jackson and Helen G. Kelly.—p. 155.
Graphs of Head Circumference of Normal Infants. H. K. Silver and W. C. Dreamer.—p. 167.
Arthritis, Conjunctivitis and Urethritis (So-Called Reiter's Syndrome) in Four-Year-Old Boy. A. L. Florman and H. M. Goldstein.—p. 172.
Para-Aminobenzoic Acid Blood Levels. R. D. Lomas and G. W. Salmon. —p. 178.
*Incidence of Sickle Cell Anemia with Rheumatic Heart Disease. I. R. Ohrenstein.—p. 186.
Erythroblastosis Fetalis Associated with Rh-Positive Mothers. C. Chesner and J. A. Cicerrella.—p. 190.
Rupture of Liver and Spleen in Newborn Infant. P. Gruenwald. —p. 195.
Childhood Manifestations of Allergic Adults: Prelude to Allergy. A. B. Schwartz.—p. 202.
Preventive Orthopedics in Treatment of Poliomyelitis. J. F. Pohl. —p. 208.

Antibody Formation in Early Infancy.—According to Cooke and her associates the belief that there is a defect in the ability of young infants to produce specific antibodies has been widely held and has been the basis for the practice of deferring active immunization until later infancy. The authors made studies on 284 healthy infants, whose ages varied between 1 and 14 months, the majority being under 6 months of age. At the first visit, blood was drawn, tested for diphtheria and tetanus antitoxins, and a subcutaneous injection of combined diphtheria and tetanus toxoid given. A second injection of the same material was given two months later, and one month after this second injection a blood sample was again titered for diphtheria and tetanus antitoxin. It was found that the production of tetanus antitoxin is as good in the early months of life as later, and this finding denotes that the mechanism for the production of antibodies is well developed in young infants. With diphtheria antigen, the development of antitoxin is definitely defective in a considerable number during the first six months of life. This impairment of antibody formation is related to the presence of passive immunity in the resistant infants and appears specific for diphtheria. Recently, there has been some tendency to use a routine of diphtheria, pertussis and tetanus antigens by simultaneous injection. While such multiple antigens are as effective in immunization as those given individually, they would seem to be most useful when given to infants after six months of age. Since there exist definite advantages in immunizing against diphtheria later in infancy and against pertussis in the early months, the "timing" is bad for routine use of combined antigens. A course which appears to meet the requirements, and which has been in use in the Washington University Children's Clinic for the past year, is to give pertussis vaccine at the sixth, ninth and twelfth weeks, and combined diphtheria and tetanus toxoids in the seventh and ninth months.

Sickle Cell Anemia and Rheumatic Heart Disease.—Ohrenstein calls attention to the confusing resemblance between the symptoms of sickle cell anemia and those of rheumatic heart disease. It is often overlooked that anemia may cause heart disease, and it may be difficult to decide whether sickle cell anemia alone is present or whether there is an accompanying rheumatic heart lesion. The pathology files of the Cook County Hospital were searched to ascertain the incidence of sickle cell anemia concomitant with rheumatic heart disease. Since 1929, 53 autopsies have been performed on patients who gave positive evidence of sickle cell anemia. In 13 of these sickle cell anemia was the direct cause of death. Among the remaining 40 patients sickle cell anemia was an indirect cause of death. Three of these patients showed evidence of rheumatic heart disease, and the primary anatomic diagnosis in 2 of these was rheumatic heart disease. The ages of these 3 patients were 3, 7 and 22 years. The incidence of sickle cell anemia concomitant with rheumatic heart disease was 5.6 per cent.

Military Surgeon, Washington, D. C.

103:85-168 (Aug.) 1948. Partial Index

Red Cross Blood Program. G. B. Dowling.—p. 94.
Human Tolerance to High Linear Accelerations of Short Duration. W. H. Ames.—p. 96.
Problems of Human Engineering in Regard to Sudden Decelerative Forces on Man. J. P. Stapp.—p. 99.
Deep-Sea Diving with Synthetic Gas Mixtures. A. Zetterström.—p. 104.
*Prevention of Decompression Sickness and Nitrogen Narcosis by Use of Hydrogen as Substitute for Nitrogen (Arne Zetterström Method for Deep-Sea Diving). H. Bjurstedt and G. Severin.—p. 107.
Group Psychotherapy with Soldiers and Veterans. W. C. Hulse.—p. 116.
Observations on Diphtheria and Diphtheria Bacilli in 5th Army Troops in Italian Campaign. A. H. Stock, I. Eisenstadt, G. W. Triplett and S. Ashe.—p. 121.
Corrective Physical Rehabilitation—Effective Approach. J. L. Rudd, R. J. Margolin and C. L. Rose.—p. 125.
Improvement of Leg Prostheses. U. K. Henschke and H. A. Mauch. —p. 135.

Prevention of Decompression Sickness by the Arne Zetterström Method for Deep-Sea Diving.—Bjurstedt and Severin describe the Zetterström hydrogen deep diving method as developed and practiced in the Royal Swedish Navy. The theoretic properties of hydrogen as a substitute for the nitrogen of the air for diving purposes are discussed. Comparisons are made between nitrogen, hydrogen, helium and other gases with respect to gas uptake and elimination, narcotic effect and inhalational resistance. The authors also discuss the basis for the calculation of hydrogen half-times and decompression tables and curves and report practical diving experiments in the open sea with the hydrogen deep diving method.

New England Journal of Medicine, Boston

239:245-282 (Aug. 12) 1948

*Diagnostic and Therapeutic Problems in Diverticulitis. C. P. LeRoyer Jr. and B. V. White.—p. 245.
Relapsing Kala-Azar: Report of Case with Cure Effected by Stilbamidine. P. R. Wilner and T. A. Haedicke.—p. 250.
Cesarean Section at Boston City Hospital, 1936-1946. D. J. McSweeney and A. J. Hassett.—p. 254.
Hospital Administration as Career. E. M. Bluestone.—p. 258.
Chemotherapy of Neoplastic Disease: II. Trends in Experimental Cancer Therapy. D. A. Karnofsky.—p. 260.
Subacute Glomerulonephritis. Severe Pulmonary Edema.—p. 271.
Carcinoma of Gall Bladder, with Massive Involvement of Liver and Metastases to Adrenal Glands.—p. 274.

Diverticulitis.—LeRoyer and White report on 200 cases of diverticulitis seen at the Hartford Hospital during the years 1927 to 1946. The diagnosis was made by the clinical picture in addition to the roentgen findings in 161 cases, at operation in 32, by the clinical picture alone in 5 and at necropsy in 2. The relative incidence of the leading symptoms and signs was essentially similar to that generally reported. A notable exception was the occurrence of pain in the lower part of the back as a prominent symptom in 20.5 per cent of the cases. The presence of melena was noted in 16.5 per cent of the cases. The frequency of bleeding from the rectum is somewhat disconcerting, because it detracts from the significance of blood in the rectosigmoid as an indication of polyps or other neoplastic lesions and complicates the differential diagnosis. Diagnostic confusion occurred most frequently in cases presenting signs suggestive of acute appendicitis and in those in which masses in the lower part of the abdomen or pelvis could not be differentiated from carcinoma of the bowel or from genitourinary lesions. Complications occurred in 50 cases. These included 7 of obstruction secondary to ligneous induration of the affected sigmoid and 43 perforations. Thirty-two of the latter led to local abscesses, 6 to fistulas, 4 to mechanical obstruction and 1 to generalized peritonitis.

New Jersey Medical Society Journal, Trenton

45:377-426 (Aug.) 1948

Cancer and Precancerous Lesions of Skin. E. Kuznitzky.—p. 379.
Prevention of Treatment Complications in Syphilis with New Parenteral Multi-Vitamin Therapy: Preliminary Report. P. R. Kline and J. J. Colavita.—p. 385.
Bichloride of Mercury Poisoning Treated with Sodium Formaldehyde Sulfoxylate: Report of Case. J. Sarokhan.—p. 387.
Hay Fever: Panel Discussion. C. G. Weston and others.—p. 389.
Pyribenzamine Fever: Report of Case. S. J. Fanburg.—p. 392.
Compulsory Treatment of Narcotic Addict. G. H. Williams.—p. 393.
Carcinoma of Gall Bladder. S. M. Gilbert.—p. 395.
*Dangers in Use of Penicillin in Diphtheria and other Upper Respiratory Infections. W. Stein.—p. 398.
Roentgen Evaluation of Abdominal Pathology. R. Pomeranz.—p. 402.
Operative Aspects of Low Back Pain. H. Briggs.—p. 404.

Dangers in Use of Penicillin in Diphtheria.—Stein points out that diphtheria has become more prevalent during the war and immediate postwar period. An infection of the upper respiratory tract caused by the diphtheria bacillus could be hastily classified as "ordinary" pharyngitis. Such a diagnostic error, apart from the failure to use antitoxin, may lead to the use of penicillin, thus masking the diagnosis and giving the toxin a chance to spread. The author reports a case which illustrates the tragedy of not making a correct diagnosis of diphtheria. This patient was treated with penicillin and was discharged on the ninth day. Later he had to be readmitted, and he died on the twenty-seventh day. Necropsy revealed diphtheritic myocarditis. The author reports 2 other cases which illustrate the possibility of confusion between follicular tonsillitis and faucial diphtheria. A fourth case reported was one of nasal diphtheria. The author stresses that diphtheria should always be kept in mind in the presence of nasopharyngeal and tonsillar infection. Penicillin should not be used in such cases until the diagnosis is certain. Smears and cultures should be taken first and antitoxin should be given if diphtheria can be suspected, for penicillin cannot replace diphtheria antitoxin in the treatment of acute diphtheria. It can be of value in the treatment of the chronic diphtheria carrier state.

New York State Journal of Medicine, New York

48:1647-1758 (Aug. 1) 1948

Incidence of Pulmonary Tuberculous "Spreads" Following Thoracic Surgery and Anesthesia. W. M. Parke Jr., E. R. Loftus and H. F. Bishop.—p. 1685.
Intrathecal Use of Pitressin for Prolongation of Spinal Anesthesia. O. H. Stover.—p. 1689.
*Intravenous Procaine in Management of Injured Hand. D. J. Graubard, M. H. Waldman and M. C. Peterson.—p. 1693.
Intravenous Anesthesia. P. W. Searles and Rose M. Lenahan.—p. 1699.
Pulmonary Pathology as Related to Infant Resuscitation. W. Schwab, H. D. Eastman and B. Etsten.—p. 1703.
Esophageal Intubation for Repair of Pharyngo-Esophageal Diverticulum. R. N. Terry.—p. 1709.
Studies on Pharmacologic Properties of Procaine and Di-Ethyl-Amino-Ethanol. E. M. Papper, B. B. Brodie, P. A. Lief and E. A. Rovenstine.—p. 1711.
History of Intercostal Muscular Paralysis as Phenomenon of Anesthesia. G. E. Burford.—p. 1715.
*Treatment of Cutaneous Anthrax with Penicillin. J. R. Griffin, R. H. Shanahan and C. E. DeAngelis.—p. 1718.
Elusive Mental Cases. B. Liber.—p. 1722
Hypertension: Manifestation of Hypertensive Vascular Disease. G. A. Perera.—p. 1724.
Some Contributions of Physical Medicine in Poliomyelitis. A. L. Watkins.—p. 1729.
Surgical Treatment of Advanced Carcinoma of Cervix. A. Brunschwig.—p. 1733.

Intravenous Injections of Procaine for Injured Hands.—Graubard and his co-workers treated 28 patients with trauma of the fingers, the hand or those contiguous structures which produced hand symptoms, with eighty-five infusions of 4 mg. procaine hydrochloride per kilogram of body weight to be given in twenty minutes. One gram of vitamin C was added to 1,000 cc. of isotonic solution of sodium chloride, containing 1 Gm. of procaine hydrochloride. Twenty-one patients had reflex sympathetic dystrophy, 2 had phantom limbs, 2 had stiffness of the hand after a fracture, 2 had contusions, abrasions and lacerations and 1 had a "trigger" finger. Relief of pain, early restoration of function and early rehabilitation were achieved by the intravenous use of procaine in the treatment of 27 of these patients. When procaine is administered intravenously it reaches the dysfunctioning capillary bed and anesthetizes the irritated nerve endings. The resulting relief of pain is usually accompanied by increased mobility and improved circulation. Procaine given intravenously will not overcome the pain initiated and maintained by a mechanical factor; three infusions given during a period of two weeks produced no change in the condition of the patient with "trigger" finger.

Penicillin in Cutaneous Anthrax.—Griffin and his co-workers treated with penicillin 17 employees in a carpet factory, 16 men and 1 woman between the ages of 25 and 69 years, who had cutaneous anthrax. The lesions were chiefly on the exposed parts of the body and on the right side. The average number of hospital days was twelve, with the shortest five and the longest thirty-three. In general, each patient received from 100,000 to 300,000 units of penicillin every three hours intramuscularly, with a total average of 12,882,940 units during the hospital course. All persons with lesions on face and head received sulfadiazine in addition to penicillin. In 1 case antianthrax serum was also used. No ill effects were noted. All patients recovered. The suspicion of anthrax, the promptness of reporting to the physician and the immediate institution of treatment were the three factors which made a malignant disease a rather benign innocuous one with a relatively uneventful course in the hospital.

Northwest Medicine, Seattle

47:549-615 (Aug.) 1948

General Formulation of Diagnosis of Heart Disease. C. S. Burwell.—p. 565.
Coronary Heart Disease in 1947. P. D. White.—p. 567.
Role of Electrocardiogram in Diagnosis of Coronary Artery Diseases. S. F. Aronson.—p. 571.
Drugs Useful in Treatment of Coronary Disease. R. C. Manchester.—p. 573.
Diagnosis of Angina Pectoris. C. E. Watts.—p. 576.
Operation for Relief of Pain in Angina Pectoris. R. H. Huff and J. T. Robson.—p. 578.
Enterococcal Endocarditis. F. P. Mathews.—p. 581.
Penicillin (161,850,000 units) in Treatment of Subacute Bacterial Endocarditis. F. C. Massey, H. R. Rich and J. B. Dealy.—p. 582.
Carotid Sinus Syndrome. R. I. Crone and F. C. Massey.—p. 585.

Oklahoma State Medical Assn. Jour., Oklahoma City

41:257-318 (July) 1948

Epidemiology and Treatment of Poliomyelitis. F. H. Top.—p. 259.

Relationship of Private Practitioner to Health Program. W. A. Loy and G. McDonald.—p. 265.

Public Health in Oklahoma. G. F. Mathews.—p. 268.

Internal Medicine and Family Physician. H. A. Christian.—p. 273.

Veterans Medical Care Plan. L. Sadler.—p. 275.

Report on Pre-Payment Plans for Medical and Hospital Care. C. Rodgers.—p. 278.

41:319-368 (Aug.) 1948

Gynecologic Aspects of Geriatrics. G. Rogers.—p. 321.

Hormone Therapy with Particular Reference to Menopause and Metrorrhagia. L. A. Gray.—p. 325.

Management of Ocular Diseases Commonly Seen in Children. A. W. McAlester.—p. 331.

Cervical Dystocia? T. C. Points.—p. 333.

Review of Gastroenterology, New York

15:657-738 (Sept.) 1948

*Anorectal Divulsion Versus Pectenotomy: Clinical, Histopathological and Surgical Study of Pectenosis in Anorectal Disease. M. G. Spiesman.—p. 667.

Digestive Tract Hemorrhage of Undetermined Origin: Clinical and Pathological Observations. I. R. Jankelson and L. R. Milner.—p. 692.

*Clinical and Gastroscopic Observations on Prolapse of Gastric Mucosa. H. F. Van Noate, W. T. Arnold and E. D. Palmer.—p. 696.

Study of Digestive Capacity of Stomach by Means of Physicochemical Methods (Part II). S. S. Cytronberg, Angel L. A. Del Castillo and A. De Lachica.—p. 702.

Anorectal Divulsion Versus Pectenotomy.—Spiesman examined microscopically the anorecta of 14 adults, of 5 newborn infants, of 3 dogs and 2 rabbits, and 16 stained sections of removed pecten bands. Comparison of the normal and pathologic pecten areas proved that true pecten bands are not found in normal recta, but that pectenosis is a pathologic entity caused by chronic passive congestion and inflammation, as first suggested by Miles and Abel. Pecten bands are fibromuscular bands consisting of larger amounts of fibrous connective tissue intermingled with smaller amounts of smooth muscle fibers. These latter fibers are some of the terminal branches of the longitudinal muscle fibers of the rectal wall terminating in the pecten area, or possibly extensions of the muscularis mucosae of the rectum, or both. Pecten bands were found mainly in the pecten area but frequently extended above and below the pecten area. The pecten bands varied in thickness from 1.5 mm. to over 5 mm. The duration of the disease determines the existence and amount of infiltration fibrosis or hyalinization in the subpecten area. The cutting of the sphincter muscles is not necessary or advisable. Pectenotomy—i. e., incision of the pecten band—results in normal relaxation of these muscles. Anorectal divulsion is unsurgical, traumatic and unnecessary. Pectenotomy is the surgically correct procedure replacing the objectionable practice of divulsion. Clinically, pectenosis is commonly found in patients suffering from cryptitis, papillitis, anal spasm, fissure in ano, pruritus ani and hemorrhoids. Pectenotomy offers a new surgical approach to the treatment of common anorectal conditions.

Prolapse of Gastric Mucosa.—Van Noate and his co-workers report 7 patients, 6 men and 1 woman between the ages of 23 and 60 years, with complaints of the upper part of the gastrointestinal tract, who were observed to have only prolapse of the gastric mucosa as the explanation for their symptoms. Intermittent epigastric pain was the presenting complaint of all but 1 patient, nausea and vomiting occurred in 5 and were associated with pain, bloating and epigastric fulness in 4. A variable filling defect in the pyloric portion of the duodenal bulb, with an "umbrella" or "mushroom" configuration, was the most constant roentgenologic observation in this series. Serial gastroscopic studies failed to demonstrate disease of the antral mucosa in any patient. Other diseases of the antrum were therefore satisfactorily excluded. Chronic gastritis was not an etiologic factor. No secondary changes in the mucosa resulted from the prolapse. In each patient a simple medical regimen adequately controlled the symptoms and in none did the clinical, roentgen or gastroscopic observations indicate the necessity for surgical treatment. Enforced rest may well have been the most important therapeutic influence.

Southern Surgeon, Atlanta, Ga.

14:477-610 (Aug.) 1948. Partial Index

Venous Thrombosis. A. Ochsner.—p. 477.

Strictures of Esophagus. M. G. Lynch.—p. 502.

Fatalities from Spinal Anesthesia. J. Adriani.—p. 506.

Acute Obstruction of Small Bowel. O. C. Cassegrain.—p. 519.

*Volvulus of Colon: Study of 24 Cases. M. L. Michel and E. L. McCafferty.—p. 525.

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Surgical Management of the Tubal Factor in Sterility. B. B. Weinstein.—p. 556.

Surgical Treatment of Malignant and Benign Obstructive Lesions of the Esophagus. M. E. DeBakey and A. Ochsner.—p. 562.

Significance of Bronchoscopy in Bronchiogenic Carcinoma. C. H. Steele.—p. 576.

Hematomas of Parturient Canal. J. P. Michaels and J. S. Herring.—p. 583.

*Bronchiogenic Carcinoma. A. Ochsner, M. E. DeBakey and I. M. Richman.—p. 595.

Volvulus of Colon.—According to Michel and McCafferty volvulus of the colon is a relatively infrequent form of intestinal obstruction which carries a high mortality. In a series of 119 cases of acute obstruction of the large bowel (exclusive of the rectum) observed by the authors at Charity Hospital of Louisiana at New Orleans and at Touro Infirmary, there were 24 cases of volvulus. The age range in this series was 13 to 84 years, but volvulus is predominantly a disease of middle and late life, and it is rather unusual to find, as in this series, patients of 13, 17 and even 25 and 28 years of age. The 3 patients with volvulus of the cecum were 17, 28 and 40 years of age, respectively, which makes their average age 28.3 years, as compared with an average of 55 years for the 21 patients with volvulus of the sigmoid colon. The advanced age of the majority of patients largely explains the unfavorable prognosis. Two of the 6 patients who died were 78 years of age, 1 was 79 and 2 were 84. The sixth patient, aged 28, was moribund when hospitalized. The diagnosis of volvulus can be made on the basis of a history of (1) sudden acute abdominal pain, sometimes associated with a previous history of similar, less acute attacks or of milder symptoms; (2) nausea and vomiting; (3) constipation; (4) distention, sometimes associated with circulatory collapse; (5) tenderness, and (6) absence of fever early in the illness. The treatment of all cases of volvulus of the colon by the same method can lead only to disaster. Each case must be individualized with respect to the location of the volvulus, the degree of circulatory change in the wall of the affected bowel and the status of the patient. Treatment may be proctosigmoidoscopic intubation or operative intervention, which may range from simple detorsion to resection. Volvulus of the transverse colon and cecum must be treated surgically. Conservative measures have no place in the treatment of volvulus of the large bowel. Deaths from shock and peritonitis in volvulus of the colon emphasize the importance of prompt diagnosis and treatment, before irreversible circulatory changes have occurred.

Bronchiogenic Carcinoma.—Ochsner and his associates review observations on 548 cases of bronchiogenic carcinoma, of which 194 were considered inoperable when first seen. Of the 354 patients with cancer considered operable, 47 refused operation. Of the 307 cases in which an exploration was done, 112 were found to be nonresectable and in 195 a pneumonectomy was done. In 138 the operation was considered as a palliative procedure because of the extension, either grossly or microscopically, to other structures; in only 57 was the procedure considered curative. The hospital mortality rate has progressively decreased with experience. Whereas before 1940 it was 65.5 per cent, in 1948 it is 11.1 per cent. Even though in almost three fourths of the 195 cases the operation was done at a time when the lesion had extended beyond the originating lung, the survival rate is considerable. Over half of the patients are alive at the end of six months. In the group in which a curative resection was done, 14.5 per cent are alive at the end of five years, and 12.5 per cent of those in whom a palliative resection was done survived the operation five years. In none of the cases in which resection was not done did the patient survive as long as three years, although all patients were treated by the accepted nonsurgical therapeutic measures, such as therapy with high voltage roentgen rays, nitrogen mustard and antireticular cytotoxic serum.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

INDICATIONS FOR CESAREAN SECTION

To the Editor:—A woman, aged 37, was referred to me for cesarean section. She was eight and one-half months pregnant, and according to recent roentgenograms the baby was in a left sacroanterior position with the presenting part not engaged. This was her seventh pregnancy. She has been married eight years and has living 3 healthy children who were all delivered after short labors. The other pregnancies ended spontaneously in miscarriages. A few years prior to marriage she had generalized peritonitis due to acute appendicitis with perforation. At that time she had a complication of severe phlebitis of the right leg, which since that time has been slightly larger than the left, and during her pregnancies she felt much more comfortable when wearing an elastic stocking. With all her pregnancies she has never had an acute flare-up of the phlebitis. During the present pregnancy the discomfort has been much worse, but she was still able to do her house work and take care of her children. Physical examination at this time reveals a pelvis normal to external measurements. There are no varicose veins or pitting edema. She wishes to have a cesarean section and sterilization at the same time. I told her that no section was indicated unless definite cephalopelvic disproportion was shown by roentgenogram at the onset of labor. Should her request have been granted?

M.D., Delaware.

ANSWER.—It was correct to refuse to do a cesarean section on this patient. It is unwise to perform a cesarean section simply to perform sterilization by ligation of the tubes. If there is an indication for a hysterectomy such as large fibromyomas there might be some justification, but this patient presumably has a normal uterus and has had no dystocia in previous labors. Furthermore, in view of the previous generalized peritonitis and the phlebitis there would have been a decidedly increased opportunity for serious trouble during and after the cesarean section. Incidentally, in the presence of normal babies, it is difficult to determine cephalopelvic disproportion in breech presentations. When a hydrocephalus is present, the enlarged size of the head is obvious, but in many roentgenograms of breech presentations, the head appears larger than it really is.

TETANUS REIMMUNIZATION

To the Editor:—Many ex-service men are seen for industrial injuries which require tetanus toxoid or antitoxin. Five years since discharge has been arbitrarily selected as a dividing line for the use of stimulating toxoid or passively immunizing antitoxin. (1) How long will a routine series plus one booster at one year's interval give immunity? (2) How frequently should "booster shots" be given to maintain this immunity? (3) If a man has received no stimulating dose of toxoid since his original series, at how many years' interval can a satisfactory immunologic response be expected from a stimulating dose? (4) To reimmunize a person who has had no toxoid for several years, is a complete series necessary or will one dose raise his titer satisfactorily? (5) What is an acceptable policy to be followed in the use of toxoid or antitoxin in ex-service men?

M.D., West Virginia.

ANSWER.—1. Accurate antitoxin estimations relative to the immunity conferred by a basic immunization with tetanus toxoid followed by a recall (booster) dose at the end of one year are not available. The experiences in the United States Army indicate that adequate response to a booster dose of toxoid was observed for at least three years after the basic immunization and two years after the routine recall dose. It is not unlikely that in some persons protection continues for considerably longer periods. The blood serum of only 4 of 42 subjects who had not received toxoid for from two to five years contained antitoxin in a concentration generally considered inadequate for protection.

2. While the majority of persons even at the end of five years after a basic immunization and one recall dose may have antitoxin concentrations adequate for protection, it is a sound policy to administer an emergency stimulating dose of 1.0 cc. (10 Lf.) fluid tetanus toxoid whenever an injury makes the danger of tetanus a possibility. There is good reason to believe that an adequate response occurs within the usual incubation period for tetanus.

3. According to Wishart and Jackson (*Canad. J. Pub. Health* **39:**181-186 [May] 1948), 55 young adults who had been previously immunized with tetanus toxoid during the war all responded to a recall dose of 1.0 cc. of tetanus toxoid. In another study by McBryde and Poston, dealing with children (*J. of Pediat.* **28:**692-696, 1946), those who received a small amount of tetanus toxoid subcutaneously five years after the original immunization showed a decided increase in serum antitoxin content. Thus, it is proved that for at least five years, probably longer, the immunologic response to a 1 cc. stimulating dose will be fully adequate.

4. If a person has had no toxoid for years a 1 cc. (10 Lf.) dose of fluid toxoid is probably adequate to recall the antitoxin level in the blood to a protective concentration of from 0.01 to 0.2 unit per cubic centimeter of serum.

5. Unless the ex-service man has retained a record of the immunizations administered to him while he was in service the proper procedure to be followed if he sustains wounds or injuries which may lead to tetanus may well be difficult to determine. "In general it is a reasonably safe procedure to administer [*fluid*] toxoid rather than antitoxin prophylactically if the individual concerned states that he was in the service for at least a year subsequent to Pearl Harbor, and that he received all of the routine immunizations administered in his organization. Such military experience would almost certainly indicate that he had received at least the basic tetanus immunization; hence, he could be expected to respond satisfactorily to a stimulating dose of toxoid" (Long, A. P., and Sartwell, P. E., *Bull. U. S. Army M. Dept.*, 1947, vol. 7, p. 384). When no adequate record of previous active immunization is available, antitoxin should be given prophylactically. Experience has taught that in civilian practice and in the presence of badly contaminated wounds the dose should be increased to 4,500 units given in three doses of 1,500 units over a period of six days.

ALUMINUM DUST IN SILICOSIS

To the Editor:—A male patient, aged 42, has slowly progressive pulmonary fibrosis as a result of exposure to silica dust at the age of 19. The present symptoms are dyspnea on exertion and nonproductive cough. Physical examination showed no cardiac involvement. There were numerous sibilant rales in both lung fields. The laboratory findings revealed a normal blood count, a normal electrocardiogram and a vital capacity of 68 per cent of normal. The roentgenogram of the chest revealed a large calcified node in the right hilar region and an increase of markings in the lung fields which I interpreted to be pulmonary fibrosis. Kindly advise treatment, especially with reference to aluminum. Is there any simplified office procedure for this method of treatment?

M.D., Texas.

ANSWER.—If your patient, now 42, has not been exposed to dangerous concentrations of silica dust since he was 19 years old, it is most unlikely that he has slowly progressive pulmonary fibrosis as a result of exposure so long ago. After both experimental and clinical studies, Gardner stated that one who has silicosis and is removed from the dust will have fibrosis develop progressively until all of the particles are encapsulated in nodules. Old nodules will not continue to enlarge or new ones form for an indefinite period. Hayhurst said that the pulmonary effects of silica have about spent themselves by the end of two years after the last work exposure and thereafter, unless the affliction is complicated by infection or emphysema, it remains practically stationary. Sander reported observations on 299 cases of silicosis selected from 3,377 foundry workers. Six years of observation prior to 1939 brought to light no case of visible progression of the silicotic fibrosis. He expressed the opinion that this is due to the fact that when the condition was discovered, although the workmen continued in the foundry, measures were instituted which markedly reduced the concentration of silica dust in the air which they breathed. He concluded that it is safe to keep those with uncomplicated silicosis at their regular work under the controlled conditions of minimal dust exposure and adequate respiratory protection, as well as under the medical control of periodic examination and absence of possibilities of contracting tuberculosis at work. Continued observation on the same persons has not changed Sander's opinion.

The large calcified node in the right hilar region is not adequate to make a diagnosis of silicosis. Such depositions of calcium are more often due to infections with tubercle bacilli or fungi, such as Histoplasma capsulatum and Coccidioides immitis. The increased markings in the lung fields may also be due to any one of a number of conditions other than silicosis. In fact, if definite nodulation is not in evidence, the condition is probably not due to silica dust.

There is no accepted treatment for well established silicosis. Denny and others have shown that aluminum dust in a concentration of about 1 per cent of the total dust inhaled affords some protection against the development of silicosis in animals. Gardner conducted experiments with animals which showed that aluminum and aluminum hydrate definitely inhibit the fibrous reaction of tissue to quartz. Moreover, they prevent progression of silicotic lesions already established and actually cause retrogression in immature tissue responses. Some evidence has accrued to indicate that aluminum dust serves as a prophylactic among persons exposed to silica dust. This is probably because the silica particles become covered with an insoluble and impermeable coating which is gelatinous, hydrated alumina. Therefore, prophylactic treatment has been installed in many places where workmen inhale a high concentration of silica dust. Not enough work has been done to justify ultimate conclusions concerning the efficacy of aluminum dust in prophylaxis.

Vrooman stated: "It will be some years before . . . its *full value in humans* [*can be assessed.*] As a therapeutic measure its use at present is entirely experimental, and a great deal of animal experimentation remains to be done before it can be accepted generally as of any more than psychological value in the treatment of silicosis."

CIGARET HABIT

To the Editor:—Please supply recent information on management of the tobacco habit. What can be done to stop the use of cigarets?

P. H. Schmiedicke, M.D., Williamsport, Ind.

Answer.—Little can be done to stop the use of cigarets by a free adult who enjoys the practice. Parenteral injunctions, penalties and prohibition appear alike ineffective. Provision of special smoking compartments and facilities for disposal of burning cigarets seem more effective than "No Smoking" signs in lessening fire and other hazards. Although the pleasures of smoking may be diminished by rinsing the mouth or swabbing the throat with 0.5 per cent silver nitrate, even this may fail with confirmed smokers. Under some conditions substitution of a pipe for cigaret may lessen fire hazards or other disadvantages while yielding the same or similar physiologic consequences.

Persuasion and the development of personal conviction against the use of tobacco as a result of religious teaching, and consideration of financial disadvantages of smoking, from the cost of the habit and fire and other consequences of it, and particularly emphasis on the effect of tobacco on physical efficiency may go far to offset the advertising propaganda of commercial interests. Deleterious effects of tobacco on growth of minors and on athletic prowess are widely accepted arguments against smoking by adolescents. The literature and scientific data regarding effects of tobacco on physical efficiency were summarized by Schrumpf-Pierron (New York, Hoeber, 1927) and by Bogen (in Fisher, I., and Emerson, H.: How to Live, ed. 20, New York, Funk & Wagnalls Company, 1938).

It is much easier to abstain from smoking completely than to stop the practice after it has once been practiced. The person who is desirous of stopping cigaret smoking may reinforce this intention by reading the literature on studies on tobacco and may secure entertainment and suggestions from reading accounts of successful exsmokers. Eating candy or otherwise raising the blood sugar may compensate for lack of the habitual adrenal stimulation from nicotine and so overcome the acute symptoms of deprivation such as tremors and nervousness suffered by some smokers soon after cessation of the habit. Chewing gum, camomile or gentian root, or the use of cigarets with low nicotine content such as denicotinized cigarets and particularly the newly developed cigaret naturally low in nicotine, may satisfy the conditioned reflex or habitual urge to handle or touch a cigaret while the subject avoids the effects of the alkaloid itself.

ECZEMA

To the Editor:—Please give a brief definition of the terms eczematous dermatitis and eczematoid dermatitis.

M.D., Pennsylvania.

Answer.—An eczematoid eruption is one that resembles eczema; eczematous refers to one that is affected with or of the nature of eczema. A patch of psoriasis, for example, is not eczematoid; yet from overtreatment it may become eczematous. Dermatophytosis is usually eczematoid, although it, too, may become eczematous. The distinction between eczematoid and eczematous dermatitis, if any, cannot be explained readily because the question is still being debated whether or not eczema and dermatitis are the same disease. According to Sutton, all cases of eczema are, to the pathologist, dermatitis. "Eczema" implies chronicity, a tendency to recurrence, an element of idiosyncrasy, and the absence of complete etiologic analysis. The dualist school, however, always refers to sunburn as an example of dermatitis which is certainly not eczema. The tendency in recent years seems to be to regard eczema as an inclusive term much like rheumatism, and to regard all cases, whether solved etiologically or not, as examples of dermatitis. There are many physicians, however, who challenge this concept.

MYOPIA

To the Editor:—Is there value in exercising the eye muscles in cases of myopia or advantage in keeping severely myopic eyes undercorrected? Should full correction ever be attempted?

Harry Epstein, M.D., New York.

Answer.—Muscle exercises and visual training programs for the improvement of vision in myopia were reviewed recently by Hildreth and others at Washington University (*Am. J. Ophth.* **30**:1563, 1947) and Woods at Johns Hopkins (*Am. J. Ophth.* **29**:28, 1946). In each group of myopes about 25 per cent of the patients studied showed a low grade improvement in reading ability following training, but the change was within the limits of error of subjective testing. The maximum benefit was obtained by those who initially had visual acuity less than was expected from their refractive errors. The exercises were valuable in producing a psychologic change in some patients, convincing them that they saw better and with greater satisfaction to themselves, although there was no change in measurable visual acuity. These patients showed no diminution in the basic underlying myopia, and the improvement probably occurred at a level rather than an ocular level. Woods concluded that the exercises educated some patients to interpret blurred retinal images more carefully and convinced others that they saw better, although there was no measurable improvement. He decided that visual training was not otherwise valuable in myopia.

There is no advantage in undercorrecting myopia except in patients with over 20 D. in whom there is frequently no improvement in vision with greater correction. Myopes should receive the smallest correction that will give them maximum vision; this is usually the full correction as found on examination with cycloplegia.

CONGENITAL SYPHILIS

To the Editor:—A woman discovered four years ago that she had congenital syphilis. A physician treated her with heavy metal compounds for three years. Her Wassermann reaction has remained strongly positive. The blood reaction of the husband is negative.

1. Spinal fluid and colloidal gold curves as well as roentgenograms of the patient's cardiovascular system are negative. What course of treatment should be followed at this time? 2. What advice should be given this couple concerning the question of child bearing? 3. What course of treatment should be followed if this patient becomes pregnant?

M.D., Pennsylvania.

Answer.—Serologic tests of the blood of a patient who has congenital syphilis may give positive results for many years, and yet the patient may never display clinical evidence of activity of the disease. The negative results of examination of the cerebrospinal fluid and of a cardiovascular examination, and the fact that this patient had three years of treatment, although the extent of it is not stated, suggest that the positive results of serologic tests in this young woman are not of great importance. No mention is made as to whether she has had interstitial keratitis or other manifestations of congenital syphilis. If she has not had any manifestations of these complications to date, it is not necessary to treat her simply because of the positive reactions to serologic tests. This suggestion is based on the statement that the patient had three years of treatment with heavy metal compounds and has no clinical manifestations of the disease.

It is extremely rare that a congenitally syphilitic woman transmits the disease to her children. In fact, it is so rare that when it occurs it is considered to be a clinical curiosity. For this reason and the fact that penicillin is so valuable in the prevention of congenital syphilis, there would be no objection to this young woman's having a child. If she becomes pregnant, she should receive, as a precautionary measure, one course of penicillin administered at the end of the first trimester and another at the beginning of the third trimester. Patients of this type are not infectious, so that the possibility of transmitting the disease to her husband may be ignored.

VERTIGO FROM STREPTOMYCIN

To the Editor:—What therapy will hasten recovery from the loss of equilibrium brought on by streptomycin during treatment of subacute endocarditis? Treatment with streptomycin was given continuously for 6 weeks and was stopped two months ago. Improvement in the intense vertigo has not occurred and other causes for the vertigo cannot be found.

G. D. Bullock, M.D., Inwood, Ia.

Answer.—Known specific treatment of value for the vertigo resulting from streptomycin therapy is lacking. Intensive effort to get the patient to adjust to this dysfunction by walking exercises is suggested.

CHRONIC CYSTIC MASTITIS

To the Editor:—A woman, 27, with 1 child 5 years of age, has breasts so painful that she can hardly bear the touch of her clothes against them. This pain lessens during her periods but increases several days afterward and lasts through the following weeks. The only substance which has helped her is male hormone, as "linguets"; these completely relieved her at first, but lately they seem to have no effect. Please suggest treatment. Clement H. Arnold, M.D., Palo Alto, Calif.

ANSWER.—Chronic cystic mastitis with mastodynia is usually considered to result from a relatively excessive estrogenic hormone elaboration by the ovaries. This may be due to an absolute increase in estrogen secretion, a lack of normal destruction of estrogen by the liver through a vitamin B complex deficiency or an imbalance between the estrogen-progesterone ratio as secreted by the ovaries. If there is evidence of a nutritional deficiency it is suggested that large doses of vitamin B complex be administered. Otherwise, the most successful therapy is through the use of male hormone. It is suggested that adequate doses of male hormone be administered, such as 10 mg. of methyl testosterone by mouth daily for about two months, or 25 mg. of testosterone propionate once or twice a week by injection for at least two months. It is more than likely that the patient will be relieved of her painful breasts for at least a number of months. If there is a resumption of her discomfort, another course of androgen therapy is justified. If the dosage of androgens is less than 200 mg. per month by parenteral administration or 300 mg. per month by the oral route, dangers of virilism are rather slight. If changes do occur, however, such as acne, hoarse voice or hirsutism, a reduction in dosage level should be made.

SPEECH DEFECT

To the Editor:—A male child, 8 years of age, is apparently normal except for a speech defect which is more pronounced in words beginning with the letter "c." For example, he pronounces "city" as "tity." I have told the parents that he will improve with age, and also suggested a speech correction school. I do not believe he needs psychiatric treatment. Please advise where this child could be sent for treatment. Is there any treatment that can be used at home?

Oscar A. Kafer, M.D., New Bern, N. C.

ANSWER.—Such cases should be analyzed by experts if they have any degree of severity, but it seems probable that this 8 year old child is merely talking baby talk. He is getting considerable attention from his mispronunciation of words, and if the parents, children and teachers will not nag him about it and will relieve the tension, it will probably clear up. If not, he should be sent to a Child Guidance Clinic. A new Directory of Child Guidance Clinics is to be published soon by the National Committee for Mental Hygiene, 1790 Broadway, New York, and if the child has not improved in six months, the directory will then be available, and the child can be sent to a clinic. If the child is of average intelligence, the best treatment for this condition would be wholesome neglect of the symptom. To send him to a clinic at present, or to a speech correction school, would be like using a sledge hammer to drive carpet tacks.

VITAMIN B_1 IN POLIOMYELITIS

To the Editor:—What is the value of intraspinal injections of vitamin B_1 in acute poliomyelitis? Since thiamine hydrochloride (vitamin B_1) given intraspinally has been shown to have a specific stimulatory action on the respiratory centers, and is essential for nerve function, should this method of treatment not be given further trial, especially in bulbar types of poliomyelitis with respiratory paralysis? What objections are there to the intraspinal use of vitamin B_1 in the convalescent stages of this disease, particularly in those victims confined to iron lungs?

Elias L. Stern, M.D., San Diego, Calif.

ANSWER.—N. Greve (*Ztschr. f. Krüppelfürsorge* **32**:102, 1939) and S. Stone (*Arch. Phys. Therapy*, **24**:350, 1943; *J. Pediat.* **22**:142, 1943) have published reports on intrathecal injections of vitamin B_1 in the therapy of poliomyelitis. The latter author combined artificial fever with vitamin therapy. One possible reason why this form of treatment has not been tried more extensively is the total lack of evidence in its favor from animal experiments. Deficiency of thiamine has not been found to increase susceptibility of animals to the experimental disease. Actually, thiamine deficiency increases the resistance of mice. It does not appear to affect the resistance of cotton rats or of monkeys.

Evidence is not available that thiamine, given in excess of the normal requirement, could do any harm during the convalescent stages. The only objections that might be raised are the uncertainties with respect to (*a*) any beneficial effect and (*b*) the advantage of administration by the intraspinal rather than other routes.

DIATHERMY WITH ROENTGEN RAYS

To the Editor:—I have been told that it was inadvisable to use short wave diathermy in the treatment of a patient who is being given roentgen therapy at the same time. *Recently an excellent roentgenologist stated that diathermy and roentgen treatment could be used together and were sometimes synergistic. Which view is correct?*

Charles J. Clock, M.D., Redlands, Calif.

ANSWER.—There is no authenticated evidence to support the contention that short wave diathermy nullifies the efficacy of roentgen rays. On the other hand, there is clinical evidence to support the contention that short wave diathermy enhances the effects of roentgen rays. For that matter, any agent that produces hyperemia, increases edema or increases blood flow enhances the action of roentgen rays by increasing the secondary or scattered roentgen rays in tissues. These soft radiations have a pronounced effect on the cells which they reach and add considerably to the incident roentgen ray beam reaching the tissues. The roentgenologist, however, has to take into consideration the additional increases in secondary radiations caused by the applications of short wave diathermy. This is essential in order to prevent overdosage and undue damage to tissues receiving both roentgen rays and diathermy.

COLD ALLERGY IN DROWNING

To the Editor:—Please give information on mechanism of cold allergy in cases of drowning. Alfred B. Sundquist, M.D., Manchester, Conn.

ANSWER.—The mechanism of cold allergy in cases of drowning is presumed to be on the same basis as other less serious or local types of cold hypersensitivity. The evidence indicates that in cold hypersensitivity of any degree there is a release of an excessive amount of histamine. This localized release of histamine results in localized vasodilation and edema and constitutes the common form of cold urticaria or angioneurotic edema. If the amount is great enough or if histamine is released from large areas of tissues a general histamine effect can be obtained. This may include flushing of the face, headache, gastric hypersecretion and lowered blood pressure. If the histamine release is still greater, profound depression of the blood pressure may ensue. This may result in fainting. It is understandable that fainting while swimming can result in drowning.

CANKER SORES

To the Editor:—In the discussion of the causes of canker sores, published in The Journal in Queries and Minor Notes, June 12, 1948, inadequate attention was given to food allergy, which is the commonest cause. Foods oftenest responsible for the various clinical manifestations of allergy, especially wheat, milk, eggs, fish, nuts, chocolate and certain fruits and vegetables, must be suspected. Many or even all fruits and tomato are often causative of canker sores. As in most chronic food allergies, cutaneous testing rarely implicates any or all of the allergenic foods. Therefore diet trial is required, for which my standardized fruit-free elimination diet has long been used with excellent results. The published menus and recipes should be given the patient (Rowe, A. H.: Elimination Diets and the Patient's Allergies: A Handbook of Allergy, second edition, Philadelphia, Lea and Febiger, 1944). Absolute adherence to the diet and the ingestion of enough of the foods to maintain weight are imperative. Ascorbic acid, 50 mg. daily, should be ordered as long as fruit is out of the diet. Other vitamins in harmony with the diet can be given after relief occurs. The diet must be continued longer than former periods of relief. After relief, foods may be added one by one, eliminating any which reproduce the canker sores.

With such diet trial I have found food allergy responsible for canker sores except in a few cases, in which bacterial allergy, arising from foci of infection, especially in the oral and pharyngeal cavities, and drug allergy at times have been responsible. The possibility of an electrolytic reaction between gold and amalgam fillings has been suggested in the literature and might require consideration in this case. Canker sores, moreover, occur in debilitated patients, but in them concomitant food allergy also may exist.

The exhaustion and drowsiness in this patient may be part of the syndrome of allergic toxemia due to food allergy, originally described by me and corroborated by Randolph (*Ann. Allergy* 3:418, 1945).

The possibility of food allergy in this patient certainly was not excluded. Cutaneous testing was done, but as stated, it rarely reveals the foods producing clinical allergy. Many reactions, moreover, are nonspecific or indicative of past or potential allergy. When canker sores or other allergic manifestations due to food allergy rapidly develop after the ingestion of food, such as walnuts, which frequently causes canker sores, then the cutaneous reaction may be positive. Usually, however, the food allergy is accumulative or delayed and the reacting bodies are minimal or absent in the skin. The dietary history at times is suggestive, but of limited help. Diet diaries, moreover, are of little aid, largely because of the refractoriness which often develops after an attack of clinical allergy such as asthma, headaches or canker sores, during which refractoriness the allergenic foods can be eaten without any symptoms for days or even weeks. Therefore only with the use of trial diets can food allergy as a cause of canker sores in a case of this sort be recognized and controlled in the great majority of cases. Albert H. Rowe, M.D., Oakland, Calif.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, SEPTEMBER—DECEMBER 1948

Titles have been listed or abstracts made of important articles in the following journals in the Current Literature Department of THE JOURNAL during the past four months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to members of the American Medical Association for a period not exceeding three days. Three journals may be borrowed at a time. No journals are available prior to 1937. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Thus most of these journals are accessible to the general practitioner.

Acta chirurgica Scandinavica. Stockholm.
Acta Clinica Belgica. Brussels.
Acta medica scandinavica. Stockholm.
Acta Oto-Laryngologica. Stockholm.
Acta Paediatrica. Stockholm.
Acta Pathologica et Microbiologica Scandinavica. Copenhagen.
Acta radiologica. Stockholm.
Acta Tuberculosea Belgica. Brussels.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Medicine. New York.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Cincinnati.
American Journal of Orthopsychiatry. New York.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Practitioner. Philadelphia.
American Review of Soviet Medicine. New York.
American Review of Tuberculosis. New York.
Anais Brasileiros de Ginecologia. Rio de Janeiro.
Analecta Médica. Mexico, D. F.
Anales de la Facultad de Medicina. Lima.
Anesthesiology. New York.
Annals of Allergy. Minneapolis.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annales pædiatrici. Basel.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Annals of Tropical Medicine. Liverpool.
Annals of Western Medicine and Surgery. Los Angeles.
Archiv für Dermatologie und Syphilis. Heidelberg.
*Archives of Dermatology and Syphilology. Chicago.
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The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "ab," abstracts; the star (*) indicates an original article in The Journal.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad.—Academy
Am.—American
A.—Association
Coll.—College
Commn.—Commission
Comm.—Committee
Conf.—Conference
Cong.—Congress
Dist.—District
Div.—Division
Found.—Foundation
Hosp.—Hospital
Indust.—Industrial
Inst.—Institute
Internat.—International
M.—Medical
Med.—Medicine
Nat.—National
Pharm.—Pharmaceutical
Phys.—Physicians
Soc.—Society
Surg.—Surgery
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